Draft Permit for the Integrated Disposal Facility

Responsiveness Summary

Department of Ecology
Nuclear Waste Program
3100 Port of Benton Blvd.
Richland, WA 99354

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RESPONSIVENESS SUMMARY

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Nuclear Waste Program

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RESPONSIVENESS SUMMARY

DRAFT PERMIT
FOR THE INTEGRATED DISPOSAL FACILITY

Hanford Facility Integrated Disposal Facility in the 200 East Area

June 2005

Introduction

This responsiveness summary is a result of written comments received by the Washington State Department of Ecology (referred to hereafter as Ecology or Department) on the proposed draft Permit to the Hanford Facility Integrated Disposal Facility Permit. This Permit sets the conditions for operation and management of the Integrated Disposal Facility (IDF). The draft Permit and Fact Sheet were available for public review and comment from May 5, 2005 to June 20, 2005. The following is a summary of changes made to the draft IDF Permit:

List of Attachments

- Added Appendix 4D

Part III .11 Integrated Disposal Facility

- Permit Condition III.11.A was revised to made it clear that the appendices are enforceable and to add Appendix 4D.
- Permit Condition III.11.B.4 was added to require a 5-year review of the permit as specified in WAC 173-303-806(11)(d).
- Permit condition III.C.1.a was revised to include all specifications in document RPP-18489, Rev 0, and the Drawings table was removed and replaced with a reference to Appendix 4A of the permit.
- Permit Condition III.11.C.1.c was revised to emphasize the requirement for submittal of a landfill final cover design, specifications, and CQA plan and post closure plan six months prior to the start of construction of the final cover for Ecology review and approval.
- New condition III.11.C.1.d was added to require notification to Ecology at least 60 (sixty) days calendar days prior to the date it expects to begin closure of the IDF landfill in accordance with WAC 173-303-610 (3)(c)(i).
- Permit Condition III.11.D.1.b had the acronym “CQA plan” inserted.
- Permit Condition III.11.D.1.d.i was revised to clarify Engineering Change Notice for Critical Systems requirements.
- Permit Condition III.11.D.1.d.ii.a was revised to clarify Nonconformance Report Requirements.
- Permit Condition III.11.D.1.d.ii.b was struck.
- Permit Condition III.11.D.ii.11c was renumbered to III.11.D.1.d.ii.b and revised to clarify Nonconformance Report requirements.
- Permit Condition III.11.D.2 was revised to prohibit a reduction in seam destructive tests without prior Ecology approval.
- Permit Condition III.11.E. was revised to add WAC 173-303.
- Permit Condition III.11.E.1.a was revised to clarify well monitoring requirements.
- Permit Condition III.11.E.1.b was revised to emphasize that changes to Chapter 5 of the Permit are subject to permit modification procedures.

- Permit Condition III.11.E.1.c was reworded for clarification.
- .Permit Condition III.11.F.1.a was struck and replaced with a requirement to submit a Leachate Monitoring Plan at least 120 days prior to initial waste placement.
- Permit Condition iii.11.F.1.b was struck and replaced with the text that was previously Permit Condition III.11.F.1.a.
- Permit Condition III.11.F.1.b was renumbered to III.11.F.1.c
- Permit Condition III.11.F.1.c was renumbered to III.11.F.1.d and Dangerous Waste Number F039 was specified for all leachate.
- Permit Condition III.11.F.2.e. was revised to add F039.
- Permit Condition III.11.F.3.a. was revised to clarify when the sub-surface liquids monitoring plan must be submitted.
- Permit Condition III.11.G.1.was revised to change the term “non-wastewater” to “construction wastewater” in conditions G.1 G.2, and G.3.
- Permit Condition III.11.G.3. will be revised; “hazardous” will be replaced by “dangerous”
- Permit Condition III.11.H was revised to add “Landfill” and Landfill Operations.
- Permit Condition III.11.H.2 was added to require construction of berms and ditches as specified in Section 4.3.8 of the permit and to require submittal of a final topographical map showing these features as a Class 1 permit modification.
- Permit Condition III.11.H.3 was added: “The Permittees shall operate the RCRA IDF Cell (Cell 1) in accordance with WAC 173-303-665(2) and the operating practices described in Chapters 3, 4, 6, 7, 8 and Appendix 4A, Section 1, Subsection 7, except as otherwise specified in this Permit“.
- Permit Condition III.11.H. 4 was added: “The Permittees shall maintain a permanent and accurate record of the three-dimensional location of each waste type, based on grid coordinates, within the RCRA IDF Cell (Cell 1) in accordance with WAC 173-303-665(5).”
- Permit Condition III.11.H.5 was added: “The Permittees shall inspect the landfill in accordance with WAC 173-303-665(4)(b) and Chapter 6 of this permit, except as otherwise specified in this Permit.
- Permit Condition III.11.I was reworded to clarify the wastes that can be accepted into the landfill.
- Permit Condition III.11.I.2.a.ii had the words “at the entire Integrated Disposal Facility” added.
- Permit Condition III.11.I.2.a.iv: “USDOE” was replaced by “Permittees” and was revised to clarify IWTRD submission requirements.
- Text in Permit Condition III.11.I.3 was separated, revised, and made Permit Condition III.11.i.3.a.
- Permit Condition III.11.I.3.b was added to specify a 5% sampling of all ILAW canisters or containers produced from every batch, glass formulation, or feed envelope to assure the radiological and waste form performance are acceptable.
- Permit Condition III.11.A.1.a., was mis-numbered and will be renumbered to III.11.I.4.c and the word “shall” was inserted.
- Permit condition III.11.I.4.c was renumbered to III.11.I.4.d.
- Permit Condition III.11.I.5.a was revised to clarify how the Risk Budget Tool was to be applied and to clarify applicable performance standards.
- Permit Condition III.11.I.5.a.ii was revised to clarify applicable performance standards.
- Permit Condition III.11.I.5.a.iii was revised to clarify applicable performance standards.
- Permit Condition III.11.I.6.a was added:” ILAW shall not be disposed of at IDF unless the ILAW has been processed and immobilized, and will be disposed, in a manner that meets or exceeds the technical basis, criteria and requirements outlined in the 1993, 1996 and 1997 agreements and commitments between USDOE and USNRC. Letter from R.M Bernero, USNRC to J. Lytle, USDOE, dated March 2, 1993; Letter from J Kinzer, USDOE, to C. J, Paperiello, USNRC, Classification of Hanford Low-Activity Tank Waste Fraction, dated March 7, 1996; and Letter from C.J. Paperiello, USNRC, to J.

Kinzer, USDOE, Classification of Hanford Low-Activity Tank Waste Fraction, dated June 9, 1997."The first paragraph of the Waste Analysis Plan, Page Part III.11.3.1, was revised for clarity.

- The "Draft" watermark on the Fact Sheet was removed.
- Waste code D81 was replaced by the correct code, D80, In the Part A form.
- Section 2.1 of the Permit was revised for clarity.
- Appendix 4B had the pages renumbered to correct an error.

Miscellaneous Changes

- Globally replace "Permittee" with "Permittees"
- Global replacement of "USDOE" with "Permittees"

This Responsiveness Summary will be made part of the Hanford Facility Administrative Record for future reference.

This Responsiveness Summary is intended to address all the comments received and show how those comments were evaluated. Ecology received the following comments, and has responded to each in the following order:

COMMENTER

ROB DAVIS

COMMENT 1:

Much of the importance of our permitting function is to use broad and meaningful questions that help bound the conditions and assure the waste conditions are within the models used to design and predict long term performance. This is especially difficult when multi generational charters for waste disposal are being granted.

Specific comment with regards to the IDF permit.

Provisions should be taken to adequately define and characterize the waste to be buried. Actions should be to included that a rigorous waste package characterization and documentation; including (but not limited too), design information, glass campaign specifications, batch identifiers, glass integrity testing, waste loading, variations and non conformance reports. The permit holder should be expected to perform batch to batch, lot to lot and container to container waste characterization to assure the radiological and waste form performance are within the envelope for the models used to design, predict life and performance.

The experimental waste glass and other unique waste types can vary the waste characteristics and properties within the same product. Each batch and each campaign will vary from the ideal. Changes in density, waste loading, decay heat absorption, glassifiers "network formers", cooling rate and surface area to list a few greatly influence the waste form performance. Evaluations and checks of containers, package liners and materials directly adjacent to the waste form should also be included.

The result of this comment will require more waste sampling and characterization. The rigor and expense will be questioned. The sampling and characterization can not be subject to budget because of the long term implications and the level of expertise required to understand the models and mechanics. Any use of "representative" waste form and reduction from the characterization labors, should be viewed unfavorably unless a great number of statistical evidence, from actual product, are presented to assure a very high level of confidence.

A second general comment is directed to our poor understanding of the degradation of the land fill during the period the pit is open. The most critical years for a land fill base mat performance are during the operational phase. During this phase the geomaterials and textiles are subject to stresses, erosion, sun and heavy traffic that can change the packing factors (density), spill, collect tumbleweeds and be subject to wild fires. At a minimum surveillance, performance reviews, maintenance and repairs should be included in the requirements for this permit.

ECOLOGY RESPONSE:

Comment 1: Thank you for your comments. Permit Condition III.11.I.3.b was added to require ILAW verification sampling for 5% of all ILAW canisters or containers produced from every batch, glass formulation, or feed envelope to assure the radiological and waste form performance are acceptable.

Comment 2: Permit Condition III.11.H states: "Permittees shall design, construct, and operate the landfill in a manner to protect the liners from becoming damaged." The geomaterials and textiles are covered by a minimum depth of operations layer which serves as protection (see Permit Section 4.3.3.3.2). The operations layer is designed for stresses such as heavy traffic. In addition, Condition III.11.H also requires the load bearing capacity of the liner to be protected. Following installation, geomaterials and textiles will not be exposed to sun or collection of tumbleweeds. In accident scenarios such as spills or wild fires, the building emergency plan will be implemented in accordance with the consequences of the event.

COMMENTER:

United States Department of Energy
PO Box 550
Richland WA

COMMENT 1:

Dear Ms. Dahl:

DRAFT HAZARDOUS WASTE PERMIT FOR THE INTEGRATED DISPOSAL FACILITY (IDF); INCORPORATION WASHINGTON DANGEROUS WASTE PERMIT NO.WA7890008967

Reference: DOE Ltr. to T. Fitzsimmons, Ecology, from R. J. Schepens, ORP, "Washington Dangerous Waste Permit No. W A 7890008967," dtd. October 25, 2002.

The U. S. Department of Energy (DOE) has received the draft lDF Permit which the State of Washington Department of Ecology (Ecology) proposes to incorporate into the above referenced Hanford Dangerous Waste Permit as Chapter III, Unit II.

We interpret and expect that the application of the proposed permit provisions will be limited to

those constituents and activities which are subject to regulation by the State pursuant to the allocation of respective authorities between DOE and the State that is provided for in the Resource Conservation and Recovery Act.

If you have any questions, please contact us, or your staff may call James E. Rasmussen, Director, Environmental Division, Office of River Protection, (509) 376-2247.

ECOLOGY RESPONSE: Thank you for your comment. Comment noted. The Hazardous Waste Management Act of 1976, which is the authority for Washington's RCRA-authorized hazardous waste program, provides Ecology's authority for issuing this permit modification.

COMMENTER:

Kathy Conaway
2540 Prestwick Drive
Richland, WA 99354

General Comment 1:

This permit is not consistent with the Hanford Site-wide Permit definitions with respect to referencing the "Permittee" and not the "Permittees". Revise this permit to reference the Permittees, not the Permittee. Are the Permittees USDOE (owner) and CHG (operator)? Please specify who the Permittees are and include that in the Permit cover sheet.

ECOLOGY RESPONSE: Thank you for your comments.

Comment 1 accepted. Ecology revised the permit by globally replacing "Permittee" with "Permittees."

In the IDF permit, "Permittees" means the United States Department of Energy (owner/operator), and CH2M HILL Hanford Group, Inc. (Co-operator).

COMMENT 2:

Permit Condition III.11.A: This permit condition needs to be amended to be consistent with WAC 173-303-806(11)(d), which requires that land disposal permits be reviewed by the department every five years and modified as necessary pursuant to WAC 173-303-830(3). Add the following permit condition:

"In accordance with WAC 173-303-806(11)(d), this Permit shall be reviewed five (5) years after the effective date and modified, as necessary, in accordance with WAC 173-303-830(3)."

ECOLOGY RESPONSE: Comment accepted with minor change. Permit condition III.11.B.4 was added: "In accordance with WAC 173-303-806(11)(d), this Permit shall be reviewed every five (5) years after the effective date and modified, as necessary, in accordance with WAC 173-303-830(3)."

COMMENT 3:

Permit Condition III.11.A.:

Throughout the permit chapters there are numerous references to the Atomic Energy Act and information on radioactive source, byproduct material, and/or special nuclear components of mixed waste contained in permit attachments. For consistency with the Waste Treatment and Immobilization Plant (WTP) Permit Chapter 10 Permit and the Demonstration Bulk Vitrification System RD&D Permit as well as for promoting consistency with documents to be submitted pursuant to the IDF Permit add the following permit language to Permit Condition III.11.A:

"Where information regarding treatment, management, and disposal of the radioactive source, byproduct material, and/or special nuclear components of mixed waste (as defined by the Atomic Energy Act of 1954, as amended) has been incorporated into this permit, it is not incorporated for the purpose of regulating the radiation hazards of such components under the authority of this permit and chapter 70.105 RCW. In the event of any conflict between this Permit Condition and any statement relating to the regulation of source, special nuclear, and byproduct material contained in portions of the permit application or other future permit documents that are incorporated into this permit, this Permit Condition shall prevail."

ECOLOGY RESPONSE: Comment noted. Acceptable wording regarding AEA restrictions is already provided within the permit. No change required.

COMMENT 4:

Permit Condition III.11.B.3:

To be clearer, this permit condition needs to reflect that the Permit is authorizing only design, construction and operation of the RCRA Cell of IDF (Cell 1). Please revise.

ECOLOGY RESPONSE: Comment noted. The condition clearly describes the waste streams limited to the RCRA permit and references chapter 4.0. Chapter 4.0 designates Cell 1 as the RCRA permitted side of the landfill. No change required.

COMMENT 5:

Permit Condition III.11.C.1:

Based on further review of the definition of "Critical Systems" included in the Hanford Site Wide RCRA Permit, it is clear that there are numerous IDF systems not identified in the "Critical Systems" list in the IDF permit which if not designed, constructed, operated and maintained properly could lead to the release of dangerous waste into the environment, and/or systems which include processes which treat, transfer, store or dispose or regulated waste and need to be added to the "Critical Systems" list in the Permit. These "Critical Systems" include the following:

Foundation Layer provides support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression or uplift.

Stormwater Control System prevents run-on from entering the landfill reducing the potential for release of dangerous waste from the landfill through overflow or leakage through increased hydraulic head on the liner and minimizes the production of leachate which requires transfer, treatment and disposal.

External landfill berms provide structural support to the liner system.

Operations layers and ramps within the landfill protect the liner from damage from equipment and wastes being placed in the landfill.

Groundwater Monitoring System, with respect to number, location, depth, or design of wells has the potential for managing dangerous waste contained in the groundwater in the event of a release from the landfill. This is a system that WAC 173-303-830 (4), Appendix I.C. would clearly require permit modification for changes to the permitted groundwater monitoring system.

Equipment used within the landfill is limited to assure that the liner and leachate collection system is not damaged.

Equipment used from outside the landfill to place waste into the landfill are limited to assure that external landfill berms providing support to the liner system are not damaged.

Add the "Critical Systems" listed above (1 -7) to the list in the IDF Permit.

ECOLOGY RESPONSE:

Partial acceptance. The term critical systems is unique to Hanford and used to distinguish the requirements for Engineering Change Notices (ECNs) and Non-Conformance Reports (NCRs). Some aspects of the IDF are regulated through specific portions of the permit and would not lend themselves to ECNs or NCRs and would therefore not be termed a critical system.

Foundation Layer – Specification 02319, Subgrade Preparation, will be added to Appendix 4A, Section 2, as a Critical System Specification.

Stormwater Control System - This is described in Section 4.3.8 of the permit. Permit Condition III.11.H.2 was added to specify that run-on and run-off control systems must be constructed in accordance with this section of the permit.

External Berms: Providing structural support for the liner: Drawing H-2-830838, IDF Geosynthetics Sections and Details, showing the liner/berm interface is included as a critical systems drawing in Appendix 4A, Section 3.

Operations layers and ramps: Specification 02315, Fill and Backfill will be added to Appendix 4A, Section 2, as a Critical System Specification.

Groundwater monitoring system: Chapter 5 of the Permit Application, Groundwater Monitoring for Land Based Units, was made an enforceable part of the permit. Changes to the monitoring systems described in this chapter would require a permit modification.

New condition III.11.H.1.a was added:

> "All equipment used for construction and operations inside of the IDF shall meet the weight limitation as specified in condition III.11. H.1. Only equipment tha can be adequately supported by the operations layer as specified in Condition III.11.H.1 (e.g., will not have the potential to puncture the liner(s) be used inside of the IDF. All equipment used for construction and operations outside of the IDF shall not damage the berms. Changes to any equipment will follow the process established by Condtion II.R of the sitewide permit. Within 120 days from the effective date of the permit, a process for demonstrating compliance with this condition shall be submitted for review by

Ecology. This process will be incorporated into appropriate IDF operating procedures prior to IDF Operations."

Of the seven items listed above by the commenter, Ecology agrees that two, the foundation layer and operations layer and ramps, should be added to the list of critical systems. The other five are either part of the enforceable portion of the permit or the subject of an added permit condition.

COMMENT 6:

Permit Condition III.11.C.1.a.:

This condition is incomplete as it does not include the following: (1) the Appendix 4A Section 2 Technical Specifications, as amended based on comments 4 and 16, (2) Appendix 4A Section 1, and (3) the CQA Plan. Additionally, to provide clearer enforceable language, replace the language "IDF design, construction, and waste acceptance for this Permit are constrained by conditions " with "The Permittees shall comply with the design, construction, and waste acceptance specified in Conditions …".

ECOLOGY RESPONSE: Partial acceptance. See response to Comment 5 with regard to adding systems under condition III.11.C.1.a. Note that the CQA Plan is already enforceable under condition III.11.D.1.b;therefore, no change is required. Permit Condition III.11.C.1.a was revised to make the entire Specifications document, RPP-18489, Rev 0 an enforceable document by inclusion into the Permit as Appendix 4D.

A wording change, similar to the change suggested by the commenter will be made ("The Permittees shall construct and operate the IDF in accordance with all specifications contained in RPP-18489, Rev 0. ").

COMMENT 7:

Permit Condition III.11.C.1.b:

As the draft permit did not include for public review the IDF landfill final closure design, specifications and CQA plan, this permit condition must clearly specify that the permit modification to add this required information to the permit is a Class 3 permit modification. This permit condition does not address the submittal and approval of a post-closure plan as required under WAC 173-303-610(8) pursuant to a permit modification and did not include for public review a post-closure plan for the IDF landfill. Revise this permit condition as follows:

"Six months prior to start of construction of IDF landfill final cover (but no later than 6 months prior to acceptance of the last shipment of waste at the IDF), the Permittees shall submit IDF landfill final closure design, specifications and CQA plan and IDF landfill post-closure plan to Ecology for review and approval. No construction of the final cover may proceed until Ecology approval is provided through a Class 3 permit modification."

Notification requirements for closing landfills under WAC 173-303-610(c) needs to be addressed under this permit condition. Add as permit condition II.11.C.1.c. the following:

"The Permittees shall notify Ecology at least 60 (sixty) calendar days prior to the date it expects to begin closure of IDF landfill in accordance with WAC 173-303-610(c)."

ECOLOGY RESPONSE:

Comment accepted. Ecology will revise III.11.C.1.c as follows: "Six months prior to start of construction of IDF landfill final cover (but no later than 6 months prior to acceptance of the last shipment of waste at the IDF), the Permittees shall submit a request for a Class 3 permit modification to add the IDF landfill final cover design, specifications and CQA plan to Ecology for review and approval. No construction of the final cover may proceed until Ecology approves the Class 3 permit modification."

New condition III.11.C.1.d will be added: "The Permittees shall notify Ecology at least 60 (sixty) calendar days prior to the date they expects to begin closure of IDF landfill in accordance with WAC 173-303-610(c)."

COMMENT 8:

Permit Condition III.11.D.1.a.:

This permit condition implies that these permit conditions also apply to Ecology. Please revise language to indicate the Permittees' responsibility.

ECOLOGY RESPONSE: Comment noted. Condition III.11.D.1.a is written to emphasize Ecology's role in field constructions activities. The Permittee's responsibility is to follow the ECN/NCR process as indicated in the permit condition. No Change required.

COMMENT 9:

Permit Condition III.11.D.1.b.i.:

The references to WAC 173-303-655(2)(h) and (i) should be to specific permit conditions. These citations do not operate independently of the Permit. Please revise permit condition to make clearer.

ECOLOGY RESPONSE: Comment noted. The wording provided in the permit condition was extracted directly from WAC 173-303-335. The purpose of the condition is to emphasize that certification of the CQA process must be accomplished prior to operations and that certification must verify that design/construction criteria found in -665(2)(h) and (j) have been met as applicable. No change required.

COMMENT 10:

General Comment:

There is no permit condition requiring the Permittees to perform inspections. Please include a new condition requiring inspections and the criteria for inspections.

ECOLOGY RESPONSE: Comment partially accepted. Chapter 6.0, "Procedures to Prevent Hazards", is listed in Condition III.11.A, and is an enforceable section of the permit. Chapter 6.0 includes all the inspections required for IDF. Permit Condition III.11.H.5 was added to emphasize inspection requirements.

COMMENT 11:

Permit Condition III.11.D.1.d.:

Is this a statement for the Permit Fact Sheet or a Permit condition? Please explain this language and rewrite permit condition to be clearer.

ECOLOGY RESPONSE: Comment accepted. The purpose of III.11.D.1.d is to ensure that the Permittee follows the IDF conditions for the ECN/NCR process as opposed to site wide condition II.L. Permit Condition III.11.D.1.d.i was revised to clarify this process.

COMMENT 12:

Permit Condition III.11.D.1.d.i.:

What are the approved designs, plans, and specifications? Ecology needs to be telling the Permittees exactly what is required during construction and how it is to be reported. This permit condition is poorly written. Please revise the language and include additional specific permit conditions on the requirements.

ECOLOGY RESPONSE: Comment noted. Please see comment 11. Permit Condition III.11.D.1.d.i. addresses the ECN process for the making changes affecting the critical systems as defined in condition III.11.C.1.a. The approved designs, plans and specifications are those that were submitted with the IDF permit application and are currently found in the draft permit. The entire Specifications document, RPP18489, Rev 0, was made enforceable by addition to the permit as Appendix 4D.

COMMENT 13:

Permit Condition III.11.D.1.d.ii.b:

Who is the Ecology representative? Is this specified in another permit condition? Please clarify.

ECOLOGY RESPONSE: Comment accepted. The permit condition containing the phrase "Ecology representative" was struck and rewritten to clarify the NCR process. The rewritten condition does not contain the phrase "Ecology representative".

COMMENT 14:

Permit Condition III.11.D.1.d.ii.c:

How can Ecology tell the Permittee that a minor nonconformance of non-critical systems will not be a modification? How do you know it will not be? Please delete this permit condition or revise it. This is not correct.

ECOLOGY RESPONSE: Comment accepted. Permit Condition III.11.D.1.d.ii.c was rewritten as III.11.D.1.d.ii.b to clarify the NCR process. The condition contains the requirement that if Ecology determines that the nonconformance is not minor, Ecology will notify the Permittees that a permit modification will be required.

COMMENT 15:

Permit Condition III.11.E.:

Groundwater shall be monitored in accordance with WAC 173-303, not just an Ecology approved plan. Please revise this permit condition to include the WAC citations.

ECOLOGY RESPONSE: Comment accepted. Ecology will add reference to WAC 173-303 to condition III.11.E.

COMMENT 16:

Permit Condition III.11.E.1.a:

This permit condition needs to be revised to make it clear that the baseline monitoring program is required to be complete prior to initial waste placement in the IDF landfill.

ECOLOGY RESPONSE: Comment accepted. Permit Condition III.11.E.1.a will be revised to reflect the commenter's comment.

COMMENT 17:

Permit Condition III.11.E.1.b.:

The permit condition should be revised to make it clear that changes to the ground water monitoring plan approved as part of this permit are subject to the permit modification procedures under WAC 173-303-830.

ECOLOGY RESPONSE: Comment accepted. III.11.E.1.b shall be revised as follows: "After the baseline monitoring is completed, and data are analyzed, the Permittees and Ecology shall assess revisions to Chapter 5.0, Table 5-2. Subsequent samples will be collected semi-annually and will include constituents listed in Table 5-2 as approved by Ecology. All data analysis will employ Ecology approved statistical methods pursuant to WAC 173-303-645. Changes to Chapter 5.0 will be subject to the permit modifications procedures under WAC 173-303-830."

COMMENT 18:

Permit Condition III.11.E.1.c:

In addition to what with all constituents? Ecology needs to be clear. Who will be reviewing the data? Ecology? USDOE? Please revise the permit condition to be more enforceable.

ECOLOGY RESPONSE: Comment partially accepted. The process for reviewing data is defined in Chapter 5 of the permit. Condition III.11.E.1.c will be revised as follows:

"All constituents used as tracers to assess performance of the facility through computer modeling should be sampled at least annually to validate modeling results. Groundwater monitoring data and analytes to be monitored will be reviewed periodically as defined in Chapter 5.0 of this permit."

COMMENT 19:

Permit Condition III.11.E.1.d.:

The permit condition references Ecology approval of a leachate monitoring plan, but a condition requiring submittal of this plan could not be found. A permit condition needs to be added to the permit requiring the submittal of this plan to include a required submittal date of the plan.

ECOLOGY RESPONSE: Comment accepted**.** Permit condition III.11.F.1.a was added: "At least 120 days prior to initial waste placement in the IDF, the Permittees shall submit a leachate monitoring plan to Ecology for review, approval, and incorporation into the permit. The Permittees shall not accept waste into the IDF until the requirements of the leachate monitoring plan have been incorporated into this permit."

COMMENT 20:

Permit Condition III.11.F.1.c.:

Please add the following reference to this permit condition:

"Leachate shall be designated with dangerous waste number F039."

ECOLOGY RESPONSE: Comment accepted. Permit Condition III.11.F.1.c was renumbered to III.11.F.1.d and the reference to Waste Code F039 was added.

COMMENT 21:

Permit Condition III.11.F.2.b:

Is Appendix 4 part of the IDF Permit? This should be a permit attachment. The Ecology approved Response Action Plan should be a permit condition. Revise this permit condition to reflect these changes.

ECOLOGY RESPONSE: Comment noted. Appendix 4C, the Response Action Plan, is an enforceable part of this permit. A permit condition is not necessary. It is included in the permit as an Appendix which is a form of an attachment.

COMMENT 22:

Permit Condition III.11.F.2.c.:

Leachate will be sampled for what? Will the leachate be analyzed? How will this occur? As is, the permit condition is poorly written and unenforceable. Please revise.

ECOLOGY RESPONSE: Comment noted. Condition III.11.F.1.c specifies that the leachate from the permitted cell shall be managed as dangerous waste in accordance with WAC 173-303. Sampling and analysis of the leachate will be identified in generator documentation which will be available during Ecology inspections of the IDF.

III.11.F.2.c anticipates a low volume of leachate in the secondary sump and attempts to establish a minimum frequency for sampling the secondary sump. No change required.

COMMENT 23:

Permit Condition III.11.F.2.e.:

Please insert "F039" before the words "dangerous waste".

ECOLOGY RESPONSE: Comment accepted. Ecology will add F039 to condition.

COMMENT 24:

Permit Condition III.11.F.3.a.:

The permit condition needs to be revised to clearly reflect that the subsurface liquids monitoring and operations plan for the SLDS must be approved by Ecology prior to initial waste placement.

ECOLOGY RESPONSE: Comment accepted. The condition will be revised as follows:

"Permittees shall submit to Ecology for approval a sub-surface liquids monitoring and operations plan (SLMOP) for the SLDS to include the following: monitoring frequency, pressure transducer configuration, liquid collection and storage processes, sampling and analysis and response actions. The SLMOP shall be approved by Ecology prior to placement of waste at the IDF."

COMMENT 25:

Permit Condition III.11.G.1.:

Why the non-wastewaters? And what are the requirements for wastewater should a waste stream be identified? What if the non-wastewater cannot be managed in accordance with ST4511?

ECOLOGY RESPONSE: Comment accepted; "non-wastewater" will be renamed as "construction wastewater" in conditions G.1 and G.2. Construction waste water will be generated only during the time before the first waste is placed into the IDF. Condition III.11.G.3 was deleted; any liquids collected in the secondary leak detection system will be managed as leachate . IDF construction wastewater shall be managed under ST 4511.

COMMENT 26:

Permit Condition III.11.G.3.:

It is not clear why this permit condition references hazardous waste constituents instead of dangerous constituents as specified in WAC 173-303. Revise the permit condition to reference dangerous constituents consistent with the rest of the permit and WAC 173-303.

ECOLOGY RESPONSE: Comment accepted. Condition III.11.G.3 was deleted from the permit.

COMMENT 27:

Permit Condition III.11.H.:

The permit condition and its header need to be expanded to clearly reflect that the landfill must be operated in accordance with WAC 173-303-665(2), 4(b) and 5 and the appropriate chapters of the permit. Revise the header from "Liner Integrity Management" to "Landfill Liner Integrity Management and Landfill Operations "and add the following conditions:

"The Permittees shall operate RCRA IDF Cell (Cell 1) in accordance with WAC 173-303-665(2) and the operating practices described in Chapters 3, 4, 6, 7, 8 and Appendix 4A, Section 1, Subsection 7, except as otherwise specified in this Permit"

"The Permittees shall maintain a permanent and accurate record of the three-dimensional location of each waste type, based on grid coordinates, within the RCRA IDF Cell (Cell 1) in accordance with WAC 173-303-665(5)."

"The Permittee shall inspect the landfill in accordance with WAC 173-303-665(4)(b) and Chapter 6 , except as otherwise specified in this Permit."

ECOLOGY RESPONSE: Comment accepted. The first proposed condition was added as Permit Condition III.11.H.3. The second proposed condition was added as Permit Condition III.11.H.4. The third proposed condition was added as Permit Condition III.11.H.5.

COMMENT 28:

Permit Condition III.11.I:

Throughout this permit condition references are made to USDOE and not the Permittees. To ensure clear enforceability of this permit condition these references should be revised to refer to the Permittees.

ECOLOGY RESPONSE: Comment accepted. A global replacement of "USDOE" with "Permittees" will be performed.

COMMENT 29:

Permit Condition III.11.I.2.a.iv.:

Is USDOE a Permittee? It should say "the Permittees". Has Ecology made the IWTRD submittal a permit condition? These requirements must be enforceable and I see no assurance of that. Please add the appropriate permit conditions.

ECOLOGY RESPONSE: Comment accepted. "USDOE" will be replaced by "Permittees" (see response for comment #28).

See last sentence of III.11.I.2.a.iv: "The initial IWTRD shall be submitted no later than January 2007, or if later than this date, as agreed to by Ecology." Conditions III.11.I.2.a.iv and I.2.a.v provide enforceable requirements for Ecology management and implementation of this

document. Language was also added to Permit Condition III 11.I.2.a.iv to specify when updates to the IWTRD are required.

COMMENT 30:

Permit Condition III.11.I.3.:

Is Ecology asking for a draft plan to review and approve? What is Ecology coordinating and isn't this the Permittees' responsibility? The Permit should clearly state what is in the Plan. Please make these changes to the Permit.

ECOLOGY RESPONSE: Comment noted. As stated in Permit Condition III.11.I.3.a; "Six months prior to disposing of ILAW in the IDF, the Permittee will submit an ILAW verification plan to Ecology for review and approval." The plan Ecology approves will be the plan that is implemented. The purpose of the condition is to ensure that Ecology has control over ILAW waste acceptance verification criteria. General contents of the plan include WTP operating parameters and glass sampling requirements as they relate to ensuring proper glass formulation. Contents of this plan will be refined during the review cycle.

COMMENT 31:

Permit Condition III.11.I.4.a.:

This permit condition seems to mean the same as permit condition III.11.I. If yes, delete this permit condition. If no, please clarify.

ECOLOGY RESPONSE: Comment noted. Permit Condition III.11.I.4.a will be retained as it specifies that DBVS waste is limited to vitrified waste from Tank S-109.

COMMENT 32:

Permit Condition III.11.A.1.a.

Is this a permit condition or just information? If it is information, move it to the fact Sheet. Pursuant to what RD&D permit conditions? Also, the numbering seems to be off. Please number this permit condition appropriately.

ECOLOGY RESPONSE: Comment partially accepted. Condition III.11.A.1.a will be renumbered as III.11.I.4.c and III.11.I.4.c as III.11.I.4.d. The condition is intended to be a requirement. The DBVS permit is referenced because it provides the criteria for the campaign test plan. Also the word "will" will be changed to "shall" to specify that review of the reports is a requirement.

COMMENT 33:

Permit Condition III.11.I.5.a

40 CFR 141 and 40 CFR 143 are federal citations. Where is the state citation? Please include this. This permit condition is unclear on time of submittals, when to submit, etc. In addition, why is Ecology providing comments to the Permittees? Is this a permit condition for Ecology? Please rewrite this permit condition.

ECOLOGY RESPONSE: Comment partially accepted. The Federal citations will be retained but the words ”but not limited to” will precede the reference to drinking water standards.

COMMENT 34:

Permit Condition III.11.I.5.a.ii.:

Ecology will meet to discuss measures? Is Ecology in violation of the Permit if they decide not to meet? Here is another federal citation and no state citation. The Permittees should be required to submit a report proposing options for mitigation measures.

ECOLOGY RESPONSE: Comment partially accepted. The Federal Citations will be retained but the words “but not limited to” will precede the reference to drinking water standards. As the condition states, Ecology will meet with the Permittee to discuss mitigation measures or to modify the WAC as necessary. Since the permit is being issued to the Permittee, Ecology cannot be in violation of the permit if they decide not to meet. This wording was added to the condition to clarify the immediate steps taken if modeling results indicate that ground water contamination is within 75% of the drinking water standards or any other environmental parameter in the performance assessment. It is very unlikely that Ecology would refuse to or be unable to meet regarding this topic. The words ”but not limited to” will be added to precede the reference to drinking water standards.

COMMENT 35:

Permit Condition III.11.I.7:

What are you telling the Permittees to do? Is this information that goes in the Permit Fact Sheet? Are these self implementing requirements?

ECOLOGY RESPONSE: Comments noted.The condition is emphasizing the fact that some IDF operational waste can go directly into IDF if it meets the appropriate waste acceptance criteria. In cases where the waste must be treated or packaged to meet LDR, IDF as the generator would be required to take the appropriate steps under WAC 173-303-200 (i.e. ship to a 90 day accumulation area) to manage the waste for ultimate disposition at another TSD or possibly at IDF for disposal. WAC 173-303-200 would be considered “self-implementing”, referencing it in the permit condition does not change this. No change to the condition required

COMMENT 36:

Chapters 3 and 4:

The following statement is included many times in Chapters 3 and 4:

“Waste stream compatibility (i.e., compatibility between individual waste streams and compatibility between streams and landfill design and construction parameters) will be assessed on a case-by-case basis. Criteria for assessing and determining compatibility will be identified in either the facility Waste Acceptance Criteria, Waste Analysis Plan, or other protocol or procedure as appropriate to ensure the waste is acceptable for receipt.”

No Waste Acceptance Criteria, addressing compatibility was found in IDF WAP or was there found other protocol or procedures specified to ensure the waste is acceptable for receipt with respect to waste to waste compatibility. Section 3.2, page Part III.11.3.2 includes waste acceptance criteria for evaluating waste to liner incompatibility, but not waste to waste

incompatibility. A permit condition needs to be added to require that criteria for evaluating waste to waste incompatibility be added to the IDF WAP.

ECOLOGY RESPONSE:

Comment noted. Condition III.11.I.1 requires the following: Six months prior to IDF operations, Permittees shall submit to Ecology for review, approval, and incorporation into the permit, all waste acceptance criteria (WAC) to address, at a minimum, the following: physical/chemical criteria, liquids and liquid containing waste, land disposal restriction treatment standards and prohibitions, compatibility of waste with liner, gas generation, packaging, handling of packages, minimization of subsidence.

Since the majority of the waste will be vitrified/containerized waste and all waste will be LDR compliant (see conditions III.11.I.1, and III.11.1.4.d), it is unlikely that waste stream incompatibility will be a concern.

COMMENT 37:

Chapter 4:

Section 4.3.6.1, Part III.11.4.15, second paragraph, last sentence states "Collected leachate from the secondary leachate collection system will be pumped to the leachate collection tank (preferred option) or back to the primary leachate collection system." Since the primary leachate collection system is in the landfill cell, this action would not be consistent with the WAC 173-303-140(b)(i) or (v). A permit condition needs to be added to the permit that eliminates this practice from Chapter 4.

ECOLOGY RESPONSE: Comment accepted. In Section 4.3.6.1 Part III.11.4.15, second paragraph, last sentence will state: Collected leachate from the secondary leachate collection system will be pumped to the leachate collection tank." The Permittees must revise Drawings H-2-830854 Sheet 1 of 4, H-2-830854, and H-2-830847 Sheet 1 to reflect elimination of the recirculation system. WAC 173-303-140(4)(b)(i) and (v) prohibit addition of free liquids to a landfill.

COMMENT 38:

Appendix 4A, Section 2:

This section is missing the following landfill technical specification which are essential to assuring, combined with the drawings and CQA plan, that the critical systems identified in Permit Condition III.11.C.1.a., as modified pursuant to Comment 4, are properly constructed: Technical Specifications 02200, 02315, 02316, 02319, 02320, 02371, 02373, 02631, 02632, 02661, 02666, 02667, 02920, 03301, 11305, 11306, 11312, 13205, 15021, 15022, 15060, 15100, 151400, and 15992.

ECOLOGY RESPONSE: Comment noted. The entire Technical Specifications Document, RPP- 18489, Rev 0, containing all of the referenced specifications, was made an enforceable part of the Permit by inserting it into the permit as Appendix 4D and including it in Permit Condition III.11.A.

Technical Specification 02661, page 18, last paragraph includes a provision for reducing the minimum frequency of one sample per 500 feet for destructive seam testing to every 1,000 feet of seam testing. As this testing is critical to assuring that the geomembrane is properly installed it is not appropriate to allow reduction from the minimum testing frequency. This minimum frequency is also consistent with the recommended minimum test frequency in EPA/500/R-93/182. A condition needs to be added to permit to eliminate this option from the permit.

ECOLOGY RESPONSE:

Comment partially accepted. The destructive seam testing is only one component of the overall quality assurance program for field installation of the HDPE geomembrane. Other equally important testing requirements include:

- Process Qualification: Use of approved equipment and procedures
- Control of Seaming Conditions: Performance of seaming process under approved weather conditions
- Daily Verification of Equipment/ Welder Pair: Requirements for trial seams to verify equipment and procedures are adequate. Trial seams are made prior to each seaming period (maximum of 6 hours) for each seaming machine used that day. Also, each seamer shall make at least one trail seam each day. Trial seams shall be made under the same conditions as actual seams.
- 100% Non-Destructive Testing: Nondestructive seam continuity testing which is performed over the full length of every seam installed on the liner. Nondestructive seam continuity is primarily by Air Pressure Testing of the air channel within double track fusion seams. In addition, localized extrusion welds are tested by vacuum box method.
- QA Oversight: Providing full time QA inspection of every weld installed on the liner. It is widely recognized by the industry that destructive testing of geomembranes is necessary, but by the nature of the testing, physically damaging to the liner system. Double track fusion seams for HDPE geomembranes are now the industry standard based on their track record of superior performance in comparison to extrusion welded seams. Numerous references have shown that most frequent leak locations within liner systems occur in special construction areas around penetrations, or patches that require the use extrusion welds, many of which are patches around destructive tests in double fusion seams. It is generally accepted in the industry that to improve the long-term performance of the geomembrane barriers, it is the best interest of all parties to minimize the quantity of extrusion welds completed. This specification recognizes the limitation of the extrusion weld technique that is required to repair every destructive test.

As noted in USEPA guidance document (EPA/500/R-93/182, page 151), the recommended frequency of destructive testing is a range of one test for every 250 feet (ft) to 750 ftof seam. One test per 500 ft of seam is an average of this range. The current contract documents require a minimum of one test per 500 ft of seam length per welding machine, or a minimum of two samples per factory panel, whichever gives the largest number of samples. Thus destructive testing will conform to the average recommended in the USEPA guidance. This testing will be performed until an adequate and substantial data base is established which confirms that the installation process is consistently meeting desired performance objectives. The frequency of destructive testing can only be reduced (to a minimum of one test per 1000' of seam) if all parties involved in the installation, oversight, and QA agree that the enough data exists from all QA testing to adequately assure seam quality. All other non-destructive tests and geomembrane QA program requirements will continue, including trial seams and non-destructive tests over the full length of every seam installed on the liner. The reduced destructive sampling frequency will only be maintained as long as the level of CQA inspection is high and the installer maintains the established level of performance. The reduced destructive

sampling frequency will minimize the potential for defects in the IDF geomembrane barriers and increase the overall effectiveness of the primary and secondary barriers in the liner system.

Liner construction quality must be verified as compliant through the CQA certification. Adding an additional condition addressing this would be unnecessary and redundant. No change required.

Permit Condition III.11.D.2 was added that requires agreement by Ecology to modify the minimum testing frequency.

COMMENT 39:

Appendix 4B:

A permit condition needs to be added to the permit clarifying that the technical specifications referenced to in Appendix 4B are included in Appendix 4A Section 2 of the Permit and the construction drawings referenced to in Appendix 4B are included in Appendix 4A Section 3 of the Permit.

ECOLOGY RESPONSE: Comment noted. The technical specifications and drawings are included in the Section IX, References, of Appendix 4B as:

-*Drawings for the Integrated Disposal Facility (IDF) Detailed Design*. RPP-19941
-*Specifications for the Integrated Disposal Facility (IDF) Detailed Design*. RPP-18489

No additional condition is required.

COMMENT 40[?]:

Section 2.3.2.1, page 27, next to last paragraph, includes a provision to reduce the minimum testing frequency during the SBL construction. As this testing is critical to assuring that the SBL will meet the performance standards for this layer it is not appropriate to allow reduction of the minimum testing frequency. A permit condition needs to be added to permit to eliminate this option from the permit.

ECOLOGY RESPONSE:

Comment noted. Section 2.3.2.1, page 24, next to last paragraph of the IDF Detailed Design Cell 1 Construction Quality Assurance Plan (RPP-18490 Rev 0, Attachment 1) states the following:

"The testing frequency during SBL construction may be increased at the discretion of the CQA certifying engineer, when visual observation of construction performance indicate potential problems or when field experience with the proposed SBL material have been obtained."

The next (last) paragraph states that the testing frequency might be increased (during adverse weather conditions, if equipment breaks down, material fails to meet requirements, etc.). The intent of these paragraphs is to allow the flexibility of testing to be increased above the minimums established if warranted in the opinion of the CQA certifying engineer. It is not anticipated that the testing frequency for the CQA evaluation of SBL properties specifically called out in the specification will be reduced during production placement.

COMMENT 41[?]:

Chapter 11:

Figure 11-1, footnote 2, indicates that the cover for a lined trench would be similar to an unlined trench. This footnote does not address the requirement that the cover have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present and that the low-permeability compacted soil/bentonite admix would not have a permeability less than or equal to geomembrane alone or in composite with the SBL. A permit condition needs to be added to the permit to correct this footnote to reflect that at a minimum for the lined trench, the flexible membrane liner would not be optional.

ECOLOGY RESPONSE: Comment noted. Chapter 11, Figure 11-1 is a conceptual depiction of the cap that will be utilized for the IDF.

Condition III.11.C.1.b requires that the closure cap be designed and constructed to the appropriate WAC requirements: "At final closure of the landfill, the Permittee shall cover the landfill with a final cover (closure cap) designed and constructed [WAC 173-303-665(6), WAC 173-303-806(4)(h)]…". No change the permit or condition required.

COMMENTER:

Allyn Boldt
1019 S. Irby St.
Kennewick, WA 99338

COMMENT 1:

References:

1) *Wilson, Michael A., Program Manager, Nuclear Waste Program, Washington State Department of Ecology, letter to Kieth [sic] [?] Kline, Manager, Richland Operations Office, US Department of Energy, Richland WA., Draft Integrated Disposal Facility (IDF) Dangerous Waste Permit, Permit No: WA 7890008967, Washington State Department of Ecology, dated May 4, 2005.*

2) *Aromi, E. S., President, CH2M HILL Hanford Group, Inc., letter to R. J. Schepens, Manager, Office of River Protection, US Department of Energy, Richland, WA., The Application of the Waste Incidental to Reprocessing to Bulk Vitrification, dated June 2, 2003.*

3) *WHC-SD-WM-TI-699, Rev 2, Technical Basis for Classification of Low-Activity Waste Fraction from Hanford Site Tanks, Westinghouse Hanford Company, Richland, WA, September 1996.*

4) *Paperiello, C. J., 1997, Director, Office of Nuclear Material Safety and Safeguards, U. S. Nuclear Regulatory Commission, Washington, D.C., letter dated June 9, 1997 to J. Kinzer, Assistant Manager, Office of Tank Waste Remediation System, U. S. Department of Energy, Richland, WA.*

5) *NRC, 2001, Overview and Summary of NRC Involvement with the DOE in the Tank Waste Remediation System-Privatization (TWRS-P) Program, NUREG-*

1747, U.S. Nuclear Regulatory Commission, Washington, D.C., June 29, 2001, p. 215.

6) *NRDC et al. v. Department of Energy, et al., Civ. No. 01-CV-413 (BLW), Idaho District Court, July 2, 2003.*

7) *Strosnider, J. R., 2004, Director, Office of Nuclear Material Safety and Safeguards, U. S. Nuclear Regulatory Commission, Washington, D.C., letter dated May 7, 2004 to R Jim, Director, Environmental Restoration and Waste Management Program, Yakama Nation, Toppenish, WA.*

The Washington State Department of Ecology has requested public comments on the Draft Integrated Disposal Facility (IDF) Dangerous Waste Permit (reference 1). This letter provides comments on the draft permit.

Waste Classification

The technical basis for the Demonstration Bulk Vitrification System (DBVS) product being low-activity waste is provided in the draft permit supporting documentation as a letter from the contractor to the Office of River Protection (ORP), US Department of Energy (DOE)(reference 2). The attachment to the reference 2 letter states:

> *"The DOE Order 435.1, Radioactive Waste Management, allows for the evaluation of 'Waste resulting from reprocessing spent nuclear fuel that is determined to be incidental to reprocessing is not high-level waste, and shall be managed under DOE's regulatory authority in accordance with the requirements for transuranic waste or low-level waste as appropriate'. The WIR evaluation process contained in the DOE Order uses the same three criteria cited by the NRC".*

In 1966 [sic] [?], The USDOE proposed a waste classification of a low activity fraction of waste separated from the tank wastes. The technical basis for the proposed Low Activity Waste (LAW) fraction was documented in reference 3.

In November 1996, DOE requested the Nuclear Regulatory Commission's (NRC) assessment of DOE's proposed waste classification for the LAW removed from the tanks. DOE was seeking NRC's technical views and whether NRC agreed with DOE's proposal.

Reference 4 provided the results of the NRC staff's technical review of DOE's proposed method for management of DOE's tank waste at Hanford. The NRC staff concluded that the waste planned for removal from the tanks and disposed on site was incidental waste and, therefore, would not be subject to NRC's licensing authority. However, the staff was also of the view that the preliminary nature of DOE's performance assessment and other information was not sufficient to allow the staff to provide more than tentative views and listed several instances that would warrant re-evaluation. Thus, the staff "provisionally agreed" with DOE that the waste it wanted to dispose of on site was incidental waste but, recognizing that significant changes in the information or management program could affect NRC's technical findings, NRC believed that DOE should consult further with NRC should such changes occur.

In 2001, the NRC stated in a summary of NRC involvement with DOE in the Tank Waste Remediation System (reference 5):

> *"Under the present system, unless the NRC determines that this LAW/incidental waste is not HLW, the waste must be disposed of as HLW in a federal repository."*

In 2003, the US District Court of Idaho ruled that the DOE violated the NWPA when it granted itself the authority to reclassify High Level Waste (HLW) and declared invalid the incidental waste portion of Order 435.1 (reference 6).

In 2004, the NRC clarified the NRC's views regarding the DOE's accelerated cleanup program at the Hanford site (reference 7). The NRC stated:

> *"In its review of the Hanford waste program in SECY-97-083 (reference 4), the NRC was acting in an advisory capacity by providing a technical review of DOE's proposed actions and was not providing any regulatory or licensing approval." and;*
>
> *"the decision to consult with NRC is within DOE's discretion …. it is our understanding that DOE does intend to consult with NRC and seek our advice regarding aspects of its tank closure program at a future time."*

The US District Court of Idaho Civ. No. 01-CV-413 (BLW) Judgment stated:

> *"DOE has violated NWPA by promulgating Order 435.1 as it relates to incidental waste, and that portion of Order 435.1 is declared invalid …"*

The NRC has not provided any regulatory or licensing approval for waste classification. The NRC position is also that the tank waste is HLW until the NRC determines the LAW/incidental waste is not HLW. Without resolution of the waste classification issue, any waste produced by the Bulk Vitrification demonstration is HLW until the issue is resolved. Federal law allows HLW disposal only in a NRC licensed federal repository. The IDF does not meet the requirements for HLW disposal.

Ecology should require storage of the Bulk Vitrification containers in the Bulk Vitrification Demonstration Facility container storage area until the waste reclassification issue is resolved. When the waste reclassification issue has been resolved, the containers can be buried in the IDF.

ECOLOGY RESPONSE:

Thank you for your comments. Comment noted. The commenter states that "Ecology should require storage of the Bulk Vitrification containers in the Bulk Vitrification Demonstration Facility container storage area until the waste reclassification issue is resolved." Ecology disagrees. The basis for LAW classification, whether vitrified in the waste treatment plant or by bulk vitrification, is a 1997 letter from the NRC (Paperiello, C.J., "Classification of Hanford Low Activity Tank Waste Fraction" Letter to J. Kinzer, ORP, June 9, 1997), not DOE M 435.1.

The decision by the U.S. Federal Court for the District of Idaho (Idaho District Court) in *NRDC v. Abraham* (in which the State of Washington participated as an amicus curiae) invalidated the portion of USDOE Order 435.1 that purported to authorize USDOE to classify high-level radioactive waste as incidental to reprocessing on the basis of "alternative requirements…as DOE may authorize," and to dispose of the waste as low-level or transuranic waste. The court ruled that the Order, as crafted, was inconsistent with the Nuclear Waste Policy Act. On November 5, 2004, the U.S. Court of Appeals for the Ninth Circuit vacated the Idaho District Court's decision and remanded the case with direction to dismiss the action.

In any event, the RD&D Permit and this IDF Permit are consistent with the Idaho District Court's decision and Washington's position in that case. The court confirmed that properly retrieved, treated, and solidified waste that is not "high level waste" and may be disposed of in a facility

other than a deep geologic repository. Ecology's views concerning whether Hanford's tank wastes may appropriately be disposed of on-site have long been informed by the Nuclear Regulatory Commission letter of 1997 (Paperiello, C.J., "Classification of Hanford Low Activity Tank Waste Fraction", Letter to J. Kinzer, ORP, June 9, 1997) that specifically addressed the issue of low-activity waste (LAW) at the Hanford Site. Ecology continues to believe that LAW produced in the WTP or by bulk vitrification, if properly retrieved, treated and solidified, may, consistent with the Nuclear Waste Policy Act, properly be disposed of on-site at Hanford and that such plans are not dependent on USDOE Order 435.1. The Nuclear Regulatory Commission (Paperiello, C.J., "Classification of Hanford Low Activity Tank Waste Fraction", Letter to J. Kinzer, ORP, June 9, 1997) outlined a process of pretreatment and treatment that allowed HLW to be separated into LAW that could be disposed in near-surface disposal units.

COMMENTER:

Heart of America Northwest
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Seattle, WA 98105

COMMENTS OF HEART OF AMERICA NORTHWEST ON PROPOSED NEW MASSIVE "IDF" LANDFILL FOR THE HANFORD NUCLEAR RESERVATION, COMMENTS ON PROPOSED WASHINGTON STATE HAZARDOUS WASTE PERMIT AND STATE ENVIRONMENTAL POLICY ACT (SEPA) DETERMINATION OF NON-SIGNIFICANCE

Background: ***Determination of Non-Significance Inappropriately Proposed for Hanford's Integrated Disposal Facility (IDF) Landfill.***

A massive new landfill to serve as a national waste dump for wastes from other nuclear weapons plants as well as for waste from Hanford Clean-Up is under construction at Hanford. This landfill is huge – 1,463 feet wide (E-W) by 1,821 feet long (N-S) and 50 feet deep[i] – significantly beyond the capacity needed for on-site cleanup activities.[ii]

The total disposal capacity of IDF is planned to be 900,000 cubic meters (m3) of waste – approximately 32 million cubic feet (ft3) of waste. The total amount of all waste disposed in Hanford's soil from the start of nuclear weapons production until 2004 was stated by USDOE to be 283,000 cubic meters.[iii] Thus, this new landfill will have 3 times more capacity than ***all*** *Hanford wastes disposed to date in Hanford's massive unlined burial grounds, causing untold contamination. It is beyond our ability to estimate the impacts to groundwater, the environment and health of future generations from the wastes already disposed in Hanford's soil.*

The total potential amount of on-site waste expected to be generated from cleanup of Hanford and requiring disposal is 156,735 m3 - prior to treatment or volume reduction. (Of this amount, 58,054m3 is expected to be mixed radioactive and hazardous waste (Mixed Waste, or "MW").[iv] Yet, USDOE plans IDF to have 900,000 m3 of disposal capacity.

In February, 2004, USDOE formally adopted a plan (referred to as a "Preferred Alternative") to import and dispose of 12.7 million cubic feet of offsite Low-Level and Mixed Waste in IDF. (360,000 m3) [v] The cumulative impacts from this plan to import and dispose of 12.7 million cubic feet of waste in IDF have never been adequately considered[vi]

ECOLOGY RESPONSE: Thank you for your comments.

Comments noted. On May 6, 2005, the Washington Department of Ecology (Ecology) issued a draft permit for construction and operation of one of two "cells" in the Integrated Disposal Facility (IDF). The cell for which Ecology issued the draft permit is permitted to receive only three

mixed low level waste (MLLW) streams. Those streams will be: 1) vitrified low-activity waste (LAW) that the US Department of Energy (USDOE) and its contractors (the Permittees) will generate in the Hanford Waste Treatment Plant (WTP), 2) up to 50 boxes of bulk vitrified waste that will result from the operation of the Demonstration Bulk Vitrification System (DBVS) in the 200 East Area, and 3) a very small quantity of secondary waste that will result from the operation of the IDF that will not require treatment before disposal.

The draft IDF permit allows the Permittees to construct and operate a mixed low-level waste cell of 82,000 m^3 total capacity. Any expansion of this capacity would require a permit modification request and additional SEPA analysis. In Condition III.11.I.2, Ecology stipulated that only certain ILAW forms were acceptable for disposal in the IDF: 1) approved glass canisters that were generated in accordance with the terms, conditions, and requirements of the WTP, and 2) 50 test boxes that are specified in DBVS test plans. In Condition III.11.I.7, Ecology also stipulated that small volumes of waste that might be generated during operations could be disposed in IDF if they do not require treatment to meet land disposal restrictions before disposal. Condition III.11.I states that no other waste forms may be disposed in IDF unless the Permittees submit a permit modification, with an analysis that will prove to be adequate to achieve State Environmental Policy Act (SEPA) compliance, a risk assessment and ground water model showing the environmental impact. Ecology must approve the permit modification.

As part of the effort to conduct its environmental review of the draft permit, Ecology reviewed several sources of information. Ecology referenced a risk assessment that evaluated forms of waste that could result from supplemental treatment, the Tank Waste Remediation Environmental Impact Statement (TWRS EIS) that discussed the long-term storage of ILAW in the 200 East Area, and the Performance Assessment that evaluated disposal of WTP ILAW at the IDF location. Based on those evaluations, Ecology determined that the construction and operation of the MLLW cell to receive the three waste streams did not present a significant hazard to human health or the environment.

Because of the restricted scope of Ecology's permitting with respect to the MLLW cell, and a settlement reached in the Washington v. Bodman lawsuit that affects disposal to both the MLLW and LLW cells, offsite waste analyzed in the HSW EIS will require additional NEPA and SEPA analysis and review before disposal of such waste can occur to either the MLLW or LLW cells of IDF and before the dangerous waste permit could be modified to accept off-site waste in the MLLW cell.

"If you build it, they will come."

USDOE is proposing a landfill with a capacity of nearly 6 times the total amount of on-site Hanford waste estimated by USDOE as requiring disposal. If built, it will be used as a national radioactive and toxic waste dump for waste from other nuclear weapons plants. USDOE's Record of Decision authorizing construction of the IDF explicitly calls for it to be used as such a national radioactive and mixed waste dump. USDOE stated the goal of the IDF is to:

> ***"provide DOE with the capability to accommodate projected waste receipts from the Hanford Site and offsite DOE facilities."***[vii]

Use of the IDF as a national waste dump, instead of meeting only the need for a landfill for Hanford Clean-Up wastes, is not a given, however. It can be stopped - if Washington State follows its policy that existing contamination is required to be cleaned up and wastes stored in compliance with standards before more waste is added to a site. This mirrors a federal policy in the federal Superfund law, which has been ignored and never enforced at Hanford.[viii] *It can be stopped if Washington State follows its policy that the cumulative impacts from disposal must be understood and must not exceed the standards approved by Washington's voters in the Model Toxics Control Act (RCW Chapter 70.105D) for protection of human health and the environment.*

Washington's State Environmental Policy Act (SEPA) requires consideration now of both the policies against adding more waste to a contaminated site, and the total (or, "cumulative") impacts on health, environment and groundwater from all proposals for use of this landfill. SEPA requires consideration – with public notice and opportunity to comment – of these policies and cumulative impacts NOW, at the time Ecology is considering issuance of a permit which will allow construction of the entire landfill.

Instead of considering these impacts through an adequate environmental impact statement at the one point in time which Ecology can either change or prevent them, Ecology has sought to avoid its responsibilities and issue a "Determination of Non-Significance" for the project and permit.

USDOE's formal justification for designating Hanford to be a national radioactive and mixed waste dump was the availability of "existing facilities", even before USDOE stopped dumping waste in unlined trenches and before it issued the HSWEIS. The only reason for designing and constructing a landfill with anything greater than 156,735 m3 of total capacity is for the landfill to serve as a national radioactive and mixed waste dump.

The U.S. Department of Energy's formally adopted goal is to use IDF as a low level radioactive and mixed radioactive and toxic waste landfill for waste from a variety of nuclear weapons plants around the country.[ix] USOE has been temporarily enjoined by a federal court from importing waste to Hanford pending resolution of the state's federal lawsuit against the U. S. Department of Energy (USDOE) over the adequacy of the required Environmental Impact Statement (EIS), on which USDOE based its plans.

Plans to add over 12 million cubic feet of waste to Hanford from other nuclear weapons plants while existing wastes are not cleaned up, contamination spreads from unlined landfills, and plans for this landfill were a driving force behind the campaign to pass Initiative 297 on the November 2004 ballot. The Initiative – now called the "Cleanup Priority Act" – received nearly 70% of the popular vote and more "yes" votes than any initiative in Washington history. The Act adopts as State policy the simple common-sense policy that contamination must be cleaned up, and hazardous wastes stored in compliance with existing standards before more waste is added to mixed waste sites.

ECOLOGY RESPONSE. Comment noted. The State Environmental Policy Act, implemented in Washington Administrative Code (Code) Chapter 197-11-060, **Content of Environmental Review**, allows Ecology and other State lead agencies to conduct phased environmental reviews (see (5) Phased reviews). The lead agency (Ecology) may determine the appropriate scope and level of detail for the environmental review to "coincide with meaningful points in their planning and decision-making processes." Phased reviews are intended to allow the agencies and the public to focus on issues that are ready for decision and to "exclude from consideration issues already decided or not yet ready."

The Permittees provided Ecology a modification to the Dangerous Waste permit application for the IDF in February 2005. That modification significantly narrowed the scope of the proposal and specified that the Permittees intended to dispose of vitrified low activity (LAW) waste to be generated at the Hanford Waste Treatment Plant (WTP) and bulk vitrified waste from the Demonstration Bulk Vitrification System (DBVS), as well as a small amount of waste operation of the IDF would generate.[1] In addition, based on a settlement in the Washington v. Bodman lawsuit, USDOE cannot dispose of any off-site waste to either the MLLW or LLW cells until undertaking a new NEPA analysis with appropriate Record(s) of Decision. Ecology evaluated the impacts to human health and the environment that would result from the disposal of the specified waste forms, with the Permittees' mitigation strategy, and determined that the impacts could be successfully mitigated.

[1] Letter, Roy J. Schepens and Keith A. Klein, "Modification to the Integrated Disposal Facility (IDF) Part B Application (DOE/RL-2003-12, Revision 1), 05-TPD-020, dated February 9, 2005

Ecology chose to evaluate the risk to the environment and human health through the SEPA environmental review and made its determination based upon appropriate risk assessments and existing environmental documents, referenced in the MDNS. Permitting the IDF does not constitute conducting a remedial action under Model Toxics Control Act, when SEPA and MTCA integration would be required by WAC 197-11 -250 through WAC 197-11-268.

Ecology's phased review of the risks of disposal of the waste to be placed in the IDF under the conditions in the draft permit resulted in an MDNS.

In the draft permit, Ecology stipulated that the Permittees may construct the initial phase of the IDF, which will measure 223 meters in the east/west direction, 233 meters north/south, and 14 meters deep, with a total capacity of 82,000 cubic meters (m^3) (see Permit Section 1.4). Ecology prohibited the Permittees from disposing of mixed (dangerous and radioactive) low level waste from any waste streams other than the wastes described above (see Condition III.11.B.3).

Ecology stipulated in the draft permit that the Permittees could not add *any* waste streams to the IDF unless Ecology approved the additions. Ecology will not consider such additions until the Permittees submit a permit modification (Condition III.11.B.3) with an analysis adequate to comply with SEPA (including cumulative impacts), a risk assessment, and groundwater modeling to show the environmental impact (Condition III.11.I).

Ecology is aware that the USDOE named Hanford as one of two regional MLLW disposal operations for wastes from other sites (see 65 FR 10061 ff). As noted above, USDOE has since entered into a settlement agreement in the Washington v. Bodman lawsuit that requires it to undertake a new NEPA analysis of off-site waste disposal at Hanford and, based on that analysis, issue appropriate Record(s) of Decision before any such disposal may occur. Furthermore, as the USDOE noted in the above Record of Decision, Hanford and the Nevada Test Site would receive and dispose of wastes from other sites, "consistent with permit conditions and other applicable requirements." The State of Washington must grant permits for disposal of off-site LLMW wastes; to date, the State has not done so and sees no urgent need to do so. The USDOE has not submitted an application to request such a permit modification; therefore, the issue of receipt of offsite waste is not ready for a decision.

Because of the restricted scope of Ecology's permitting with respect to the MLLW cell, and a settlement reached in the Washington v. Bodman lawsuit that affects disposal to both the MLLW and LLW cells, offsite waste analyzed in the HSW EIS will require a new NEPA and SEPA analysis and review before disposal of such waste can occur to either the MLLW or LLW cells of IDF and before the dangerous waste permit could be modified to accept off-site waste in the MLLW cell.

Ecology appreciates your concern about the issue of offsite waste being shipped to Hanford and the potential of that offsite waste to either negatively impact Hanford's risk burden or for the offsite waste to compete or out-compete Hanford waste for space within in IDF's allowable risk budget. In that light, Ecology offers these commitments:

- The State is committed to preserving IDF's capacity for accepting Hanford's onsite cleanup-related waste without violating environmental thresholds.
- In making this permitting decision, the State examined a proposal to build IDF at 1/3 of the capacity (82,000 cubic meters for each cell for a total of 164,000 cubic meters) previously proposed by DOE on both the MLLW and LLW sides.
- Permit Condition III.11.I.5.a.ii. requires the USDOE and Ecology to meet to discuss mitigation measures or modified waste acceptance criteria for specific waste forms if

modeling indicates that waste disposal may bring the facility within 75% of an environmental threshold or performance standard.

- Such results will be information that may cause Ecology to re-examine this permitting decision pursuant to WAC 173-303-830(3) and threshold determination pursuant to WAC 197-11-340(3).
- Similarly, any request by the Permittees to modify the permit to expand or allow disposal of additional waste on the MLLW side, or any decision by the USDOE to expand or dispose of additional waste on the LLW side, will be information that may cause Ecology to re-examine this permitting decision pursuant to WAC 173-303-830(3) and threshold determination and mitigation obligations pursuant to WAC 197-11-340(3).
- If Ecology re-examines this permitting decision and Threshold Determination, Ecology may modify the permit to ensure that capacity at IDF is preserved for accepting Hanford's onsite cleanup-related waste without violating environmental thresholds.
- If USDOE wishes to expand the size of the landfill or add new waste streams in a manner that requires a permit modification or new SEPA Threshold Determination, permit condition III.11.i.5.a requires USDOE to submit a new Risk Budget Tool. That risk budget tool will be subject to public comment with the new draft permit or the revised SEPA Threshold Determination.

How Can Washington State Issue a "Determination of Non-Significance While Suing Over USDOE's Failure to Consider the Significant Impacts from the Proposed IDF Landfill?

Ecology's proposed issuance of a Determination of Non-Significance for the initial permit – which is the only state action needed to allow the full project to go forward with disposal of up to 7 million cubic feet of offsite low-level waste[x] – is incomprehensible. This Determination flies in the face of Washington State's federal court challenge to USDOE's Hanford Solid Waste EIS – which is the basis for the IDF landfill – as legally inadequate due to failure to consider cumulative impacts.

Ironically, Washington State is now acting as if it can give approval to a landfill for imported wastes without the same EIS having been issued that Washington State sued to require.

Washington State has formally adopted a position that the Hanford Solid Waste EIS did not adequately meet federal requirements under NEPA to disclose and consider the cumulative impacts from all wastes proposed to be disposed in IDF, and that USDOE may not proceed with any action until there is an adequate EIS. Washington has demonstrated that the total amount of wastes from all USDOE proposals to add waste to IDF will exceed the acceptable "risk budget" for the IDF – resulting in violation of applicable health and groundwater protection standards.

The State Environmental Policy Act (SEPA) is even clearer than NEPA in requiring the cumulative impacts of all related proposals to be considered in an EIS when the actions will have a probable significant impact on health and the environment. Related proposals include the disposal of on-site and offsite Low-Level Waste – especially when those wastes may take up much of the available "risk budget" for the IDF landfill, which would greatly harm cleanup efforts by limiting future disposal of on-site wastes.

SEPA requires identification of enforceable mitigation measures in a DNS, if the agency decides that the project (with all related proposals) will have a probable significant impact absent mitigation (such as enforceable waste acceptance criteria for LLW and volume requirements or barring offsite waste if the risk budget is close to being exceeded). The proposed DNS has nothing of this sort. Instead, it is an abdication of Ecology's responsibilities under SEPA and Washington's new Cleanup Priority Act.

The public has a right to review an adequate EIS on the entire project with a description of all proposed wastes and cumulative impacts. The public has a right to have all reasonable alternatives considered – which has never been done. USDOE violated these rights by failing to

disclose key impacts and data in the HSWEIS, and failing to consider reasonable alternatives. Washington State is to be applauded for suing over this violation of NEPA.

However, Washington's residents have a right to have an EIS which meets SEPA requirements before Ecology grants USDOE a RCRA / HWMA permit for the IDF landfill. USDOE's failure to issue an adequate EIS for NEPA means that the EIS cannot be relied upon to meet SEPA requirements. Ecology has acknowledged this. Thus, it is inexplicable that Ecology is insisting it can authorize construction on the basis of an inadequate SEPA checklist for a project which has massive significant and probable impacts. Ecology's claim that it can do so because the permit bars the addition of all but 3 waste types is disingenuous – since the permit allows construction of the entire landfill, while doing nothing to mitigate or control the millions of cubic feet of low-level waste which will go into the landfill on the other side of an artificial dividing line. (The landfill is one integrated landfill with one set of cumulative impacts. The dividing line between the MW and LLW sides is entirely artificial and illusory for purposes of considering the cumulative impacts of the entire landfill).

That "low-level waste" may include extremely radioactive "Remote-Handled" wastes which may contribute significantly to the total impacts. On their own, the Low-Level Wastes (LLW) may exceed the allowable "risk budget" for the IDF landfill – exceeding applicable standards. This problem is heightened due to the lack of independent regulation of USDOE's disposal practices, including USDOE's history of giving itself "waivers" to allow disposal in Hanford's burial grounds of LLW which violates USDOE's own Waste Acceptance Criteria, and a documented history of illegally disposing of mixed wastes with LLW due to inadequate characterization, tracking and designation. While USDOE's Preferred Alternative in the Hanford Solid Waste Disposal EIS (Feb. 2004) was for import and disposal of 7 million cubic feet of LLW from other USDOE nuclear weapons and research sites, the size of the future planned units would allow millions of additional cubic feet of offsite LLW. Ecology has a duty under SEPA to consider the cumulative impacts of these proposals (7 million cubic feet and if the maximum planned disposal capacity of the landfill was utilized) before issuing any permit for the project which would allow construction without mitigating conditions that limit potential impacts.

Ecology has a duty under SEPA, for example, to consider limiting the size of the IDF to onsite wastes because of the probability that the landfill will exceed the acceptable risk budget even if limited to onsite wastes. Indeed, substantive state and federal laws impose a duty on Ecology to adopt such a mitigation measure. If Ecology adopted a "mitigated DNS", it might be able to say that there would no longer be probable significant impacts from the entire project – however, the impacts from onsite waste alone are so great that this one mitigation measure alone could not provide justification for not requiring an adequate EIS.

ECOLOGY RESPONSE: Comment noted. As noted in previous responses, Ecology granted the Permittees a permit only for construction and operation of one cell of the IDF. Per the conditions in the draft permit, that cell will receive three mixed low level waste streams, all of which will result from tank waste treatment on the Hanford Site or the operation of the IDF. As also noted above, Ecology limited the size of the IDF that the Permittees may construct under the draft permit and required the Permittees to submit a permit modification and supporting information about the environmental impacts of expansion of the facility and or the addition of waste streams as part of the modification. The Permittees may not expand the size of the IDF or receive any waste from other sites or Hanford facilities under the terms of the draft permit.

As the commenter noted, the IDF facility that the *Final Hanford Solid Waste Environmental Impact Statement* evaluated is one in which both low level and mixed low level wastes may be disposed. Ecology found that the Final HSW EIS was not adequate in its analysis of the cumulative impacts of burying several different waste forms; therefore, the threshold determination that led to a Mitigated Determination of Nonsignificance for the draft permit used other information that addressed the performance of the vitrified waste forms and other wastes to consider impacts of disposal. It should be noted that Ecology issued a Mitigated Determination of Nonsignificance based on the mitigation measures required in the SEPA

document and the substantial mitigation measures issued as enforceable permit conditions in the IDF Permit.

Ecology recognized that disposal of low level wastes, which the Permittees may dispose on the Hanford Site under the auspices of the Atomic Energy Act, may affect the quality of the State's resources, including its groundwater, should the waste escape from the IDF. To protect the State's resources and the health of its citizens, Ecology required the Permittees to prepare a model-risk budgeting tool to model future impacts of disposing of all IDF waste forms, both LLW and MLLW (see Condition III.11.I.5). In addition, Ecology required the Permittees to meet with Ecology to discuss mitigation measures or modification of waste forms whenever the model shows an impact at 75% of the performance standard (e.g., the Federal Safe Drinking Water standards). These mitigation measures, which would be determined in the future, may include (but are not limited to) restricting specific waste forms from disposal at IDF; treatment requirements for specific waste forms; and reserving risk budget capacity for Hanford only waste. Permit Condition III.11.I.5.a.iii prohibits the Permittees from disposing of any waste that will result in a violation of **any** State or Federal limit.

Use of the risk budgeting tool will aid Ecology in evaluation of the cumulative impacts of disposal of low level waste and mixed low level waste. Such an evaluation will help to ensure that cumulative and long-term impacts do not exceed performance standards.

The commenter suggested that disposal of large quantities of low level wastes may cause the risk budget to be expended without disposal of mixed low level wastes. Ecology intends to use the model-risk budgeting tool to identify such impacts before the State agrees that the Permittees may dispose of mixed low level wastes. As noted above, Ecology intends to use the model to identify those occasions when 75% of the performance standard will be met. When that threshold is met, Ecology intends to require the Permittees to discuss mitigation measures and waste forms. Ecology has no plan to allow the Permittees to dispose of mixed low level wastes that could cause the performance standards to be exceeded. Should the risk budget be expended by the Permittees in disposal of low level wastes, Ecology could prohibit additional disposal of mixed waste in the IDF. The USDOE would then be required to dispose of MLLW in a compliant facility elsewhere.

Ecology appreciates your concern about the issue of offsite waste being shipped to Hanford and the potential of that offsite waste to either negatively impact Hanford's risk burden or for the offsite waste to compete or out-compete Hanford waste for space within in IDF's allowable risk budget. In that light, Ecology offers these commitments:

- The State is committed to preserving IDF's capacity for accepting Hanford's onsite cleanup-related waste without violating environmental thresholds.
- In making this permitting decision, the State examined a proposal to build IDF at 1/3 of the capacity (82,000 cubic meters for each cell for a total of 164,000 cubic meters) previously proposed by DOE on both the MLLW and LLW sides.
- Permit Condition III.11.I.5.a.ii. requires DOE and Ecology to meet to discuss mitigation measures or modified waste acceptance criteria for specific waste forms, if modeling indicates that waste disposal may bring the facility within 75% of an environmental threshold or performance standard.
- Such results will be information that may cause Ecology to re-examine this permitting decision pursuant to WAC 173-303-830(3) and threshold determination pursuant to WAC 197-11-340(3).
- Similarly, any request to modify the permit to expand or allow disposal of additional waste on the MLLW side, or any decision by DOE to expand or dispose of additional waste on the LLW side, will be information that may cause Ecology to re-examine this

permitting decision pursuant to WAC 173-303-830(3) and threshold determination and mitigation obligations pursuant to WAC 197-11-340(3).

- If Ecology re-examines this permitting decision and Threshold Determination, Ecology may modify the permit to ensure that capacity at IDF is preserved for accepting Hanford's onsite cleanup-related waste without violating environmental thresholds.
- If USDOE wishes to expand the size of the landfill or add new waste streams in a manner that requires a permit modification or new SEPA Threshold Determination, permit condition III.11.i.5.a requires that DOE submit a new Risk Budget Tool. That risk budget tool will be subject to public comment with the new draft permit or the revised SEPA Threshold Determination.

***Ecology's Third Attempt to Issue a Determination of Non-Significance for this Landfill**:*

This is Ecology's third attempt to authorize construction of the IDF landfill without requiring an adequate environmental impact statement (EIS) considering the cumulative impacts from all wastes which will go into the IDF. Ecology has asserted that it is probable that the total amount of proposed wastes disposed in IDF will significantly impact groundwater and violate standards designed to protect human health. Pubic outcries forced Ecology to retreat from the prior two proposed determinations, and have led USDOE to revise its permit to not include offsite mixed wastes or secondary mixed wastes from vitrification of High-Level Wastes. However, this new proposed limitation of the permit only piecemeals consideration of impacts at a later date and avoids ever considering the cumulative impacts of the entire landfill – including low-level waste and offsite wastes – which are likely to dwarf on-site wastes. This would be the only state action required before construction went forward and the site made available for a national radioactive waste dump.

Ecology has never responded to comments on the prior proposals for a DNS, especially those noting the total inconsistency between WA State suing over the inadequacy of the USDOE's EIS and WA Ecology issuing a Determination of Non-Significance allowing the landfill to proceed to handle low-level radioactive waste from all over the nation.

We have previously urged Ecology to mail notice of this proposed DNS and permit to all members of the public and organizations who commented on the Hanford Solid Waste EIS, especially those who commented on the proposed IDF landfill and use of Hanford as a national radioactive and toxic waste dump. Ecology has failed to meet its basic public notice and comment requirements in this process, by failing to mail notice to all interested persons. Ecology failed to provide adequate mailed notice to all persons on the Hanford TPA interested persons and meetings lists – much less all those who commented on the HSWEIS. Ecology purports to adopt portions of the HSWEIS for SEPA purposes, which makes it incumbent on Ecology to provide notice to everyone who attended hearings and commented on the HSWEIS. This list is readily available to Ecology. The notice must be withdrawn and reissued for public comment.

All comments received on the prior proposals for a DNS and permit for the IDF landfill should be part of this record and responded to – since they have never been responded to by Ecology, and the commentors may not have received notice of this proposed action.

ECOLOGY'S RESPONSE: Comments noted.

For the purposes of clarification, Ecology issued two Determinations of Nonsignificance (DNS) prior to the Mitigated DNS that accompanied the draft IDF permit. Each DNS supported a Temporary Authorization (TA) that Ecology granted to the Permittees to 1) perform rough excavation then to 2) install an admix test pad in the portion of the IDF that Ecology does not permit and two groundwater wells at the IDF site. Release of each of the DNS documents

appeared on Ecology's SEPA register in parallel with release of the TAs, as required by WAC 197-11-508(1). As required by the regulations, each DNS showed the names of the responsible official and the Nuclear Waste Programs SEPA coordinator. Copies of the DNSs were made available to the public for information.

When Ecology released the TAs, it provided copies to the Hanford Advisory Board, the tribal nations, and the State of Oregon. In addition, notification was provided to those on the Hanford ListServe.

Ecology did not rescind either of those DNSs because of public comment. As required by the SEPA regulations, Ecology personnel reviewed the comments on the two DNSs for significant new information, but their reviews did not result in a need to rescind either determination.

Due in part to its challenge to the HSW EIS (Washington v. Bodman) and litigation involving the Cleanup Priority Act, Ecology separated its consideration of construction impacts, which were certain, from its consideration of future waste disposal impacts, which depend on what waste is permitted by Ecology, and/or can be ultimately supported by USDOE through NEPA analysis and Record(s) of Decision, to be disposed to the IDF. For both rough excavation of the IDF and for the installation of the admix test pad and groundwater wells, Ecology determined that the Permittee did not take actions that led to significant environmental impacts that would have required Ecology to prohibit the actions. The Permittees had already planned to keep soil excavated at the site. Had Ecology determined that the mixed waste portion of the IDF could not be constructed, then the Permittee would have returned the soil to the excavation. The Permittees installed the admix test bed to comply with the requirements to test the performance of the admix layer in the Dangerous Waste Regulations [see WAC 173-303-665(2)(h)(i)(B) and 173-303-335(3)(b)], in the portion of the IDF that is not permitted. As a result, the testing the Permittees undertook did not affect the permitted cell.

In addition, the groundwater monitoring wells, when they become operational, will provide more information about the movement of and contamination groundwater under the 200 East Area.

Ecology will respond to informal comments provided by the commenter on the two DNSs within this response document, as the commenter requested.

For the mitigated DNS (MDNS), Ecology complied with the requirements in WAC 197-11-340(2)(iv) and issued the MDNS in parallel with the draft permit. Ecology took comments on that MDNS for the duration of the comment period for the draft permit (45 days).

Background on the IDF Landfill Relating to the SEPA DNS and Permit:

In the Hanford Solid Waste Disposal Environmental Impact Statement (HSWEIS), the U.S. Department of Energy (USDOE) proposed to use Hanford as a national radioactive and toxic waste dump for over 12 million cubic feet of waste from other nuclear weapons plants through the year 2046.

Thousands of people submitted comments on the first Draft EIS opposing this scheme, calling for an end to USDOE dumping radioactive waste in unlined soil trenches at Hanford, and calling for the draft to be withdrawn as inadequate due to failure to consider the cumulative impacts of adding these wastes to Hanford's soil on top of existing contamination. USDOE was forced to withdraw and revise the EIS. The revision also considered use of a new landfill with liners for all on-site and offsite wastes to be disposed at Hanford through the year 2046, which USDOE said would meet a mission it had adopted to use the Hanford site as a national radioactive and mixed radioactive and hazardous waste ("Mixed Waste") dump.

Despite thousands of additional comments calling the analyses inadequate and opposing USDOE's plans, USDOE issued a Final HSWEIS in February 2004 with a preferred

alternative of using a new landfill in Hanford's 200 East Area to dispose of over 12 million cubic feet of low-level and mixed waste from other nuclear weapons complex sites, in addition to onsite wastes.

In June, 2004, USDOE issued a Record of Decision (RoD), based on that EIS, to open the "Integrated Disposal Facility" (IDF) landfill at Hanford for on-site and offsite wastes, with the initial decision (subject to future changes) to use the landfill for 3 million cubic feet of offsite waste – and to ship over 460,000 cubic feet of offsite waste to Hanford for disposal in the new IDF landfill by the end of 2007, when the landfill would be operational.

In 2003, Heart of America Northwest with other citizen groups, and joined by Washington State, filed suit to stop USDOE from trucking highly radioactive Plutonium wastes (called Remote-Handled Transuranic Wastes, or "TRU") to Hanford without any consideration of the environmental and health risks in an environmental impact statement. In May, 2003, the US District Court for Eastern WA agreed that import of these wastes had probable significant impacts to health and the environment and the Court enjoined USDOE from importing these wastes to Hanford without considering the impact of these shipments and the cumulative impacts of related plans toad waste to Hanford in the HSWEIS.

Washington State then challenged USDOE's Final Hanford Solid Waste Disposal EIS (HSWEIS) and the Record of Decision issued in June, 2004 as being legally inadequate for failing to consider the cumulative impacts from both the offsite wastes which would be added to Hanford in the proposed IDF landfill, and the on-site "secondary" wastes proposed to go into the landfill from following treatment of waste retrieved from Hanford's High-Level Nuclear Waste Tanks.

Simply put, Washington State has shown that USDOE failed to consider the cumulative impacts from adding massive amounts of offsite waste and the secondary wastes from treatment of High-Level Nuclear Wastes to this new IDF landfill. If all proposed wastes were to go into the landfill, Washington State has shown that USDOE's own documents (many of which USDOE failed to consider in the HSWEIS) reveal that groundwater would be contaminated from the IDF landfill – and that this contamination would be significant, and would adversely affect human health for future generations potentially exposed to the site's contamination.

The significant potential impacts from ALL wastes proposed by USDOE to be disposed in the IDF landfill are required to be considered by Washington Ecology under Washington's State Environmental Policy Act (SEPA) – even if USDOE failed to adequately consider them in USDOE's HSWEIS under the National Environmental Policy Act (NEPA).

Yet, despite having conclusive evidence that the SEPA requirements for consideration of the cumulative impacts from all related proposals for disposal of wastes in the IDF landfill have never been met, Washington Ecology has issued a proposed "Determination of Non-Significance" for the IDF Landfill – allowing Ecology to issue the only permit needed by USDOE to construct and operate the entire landfill, including construction and operation of portions of the landfill which USDOE says may be used for 7 million cubic feet of poorly defined offsite radioactive waste.

ECOLOGY RESPONSE: Comments noted. As noted above, Ecology issued a draft permit for the construction and operation of one cell of the IDF only. That cell will be constructed to contain three MLLW streams (bulk vitrified tank waste resulting from operation of the DBVS, vitrified tank waste generated at the WTP, and a very small quantity of mixed waste that could be generated during the routine operation of the IDF).

Ecology did not evaluate the addition of all of the possible volumes of wastes that might be added to the IDF if it were constructed to full size, as part of its evaluation of the impacts to the environment and human health from the disposal of the three waste streams listed above. The Permittees submitted a revised Dangerous Waste Part B permit application that requested a permit only for a single cell to contain the three mixed low level waste streams. Ecology chose to conduct a phased SEPA review that was appropriate for the application the Permittees

submitted. Ecology *did* consider the related impacts of the adjacent LLW cell combined with the MLLW cell at the capacity requested in the final permit application.

Within the IDF permit, Ecology required the Permittees to submit a permit modification before they begin to add any waste stream not specifically allowed by the draft permit Ecology issued. The Permittees must submit a permit modification, with an analysis of the environmental impacts of all of the wastes in the IDF sufficient for Ecology to complete a SEPA evaluation, a risk assessment, and groundwater modeling sufficient to show any environmental impacts. (See Condition III.11.I.) To attempt to evaluate the addition of wastes from other sites or other Hanford waste forms in the absence of the information that must accompany a permit modification would require Ecology to use incomplete information to make a determination. Under WAC 197-11-330(2)(b), part of the threshold determination is a determination that environmental analysis would be more useful or appropriate in the future. This is underscored by the recent settlement in Washington v. Bodman, under which USDOE must undertake a new NEPA analysis and issue appropriate Record(s) of Decision based on that analysis before off-site waste disposal may occur to either the MLLW or LLW cells of IDF. Clearly, analyses of disposal of wastes from offsite or new waste streams will be more reliable when the Permittees submit information that is specific to a permit modification.

In light of the concerns listed above, Ecology offers these commitments:

- The State is committed to preserving IDF's capacity for accepting Hanford's onsite cleanup-related waste without violating environmental thresholds.
- In making this permitting decision, the State examined a proposal to build IDF at 1/3 of the capacity (82,000 cubic meters for each cell for a total of 164,000 cubic meters) previously proposed by DOE on both the MLLW and LLW sides.
- Permit condition III.11.I.5.a.ii. requires DOE and Ecology to meet to discuss mitigation measures or modified waste acceptance criteria for specific waste forms if modeling indicates that waste disposal may bring the facility within 75% of an environmental threshold or performance standard.
- Such results will be information that may cause Ecology to re-examine this permitting decision pursuant to WAC 173-303-830(3) and threshold determination pursuant to WAC 197-11-340(3).
- Similarly, any request to modify the permit to expand or allow disposal of additional waste on the MLLW side, or any decision by DOE to expand or dispose of additional waste on the LLW side, will be information that may cause Ecology to re-examine this permitting decision pursuant to WAC 173-303-830(3) and threshold determination and mitigation obligations pursuant to WAC 197-11-340(3).
- If Ecology re-examines this permitting decision and Threshold Determination, Ecology may modify the permit to ensure that capacity at IDF is preserved for accepting Hanford's onsite cleanup-related waste without violating environmental thresholds.
- If USDOE wishes to expand the size of the landfill or add new waste streams in a manner that requires a permit modification or new SEPA Threshold Determination, permit condition III.11.i.5.a requires that DOE submit a new Risk Budget Tool. That risk budget tool will be submitted to public comment with the new draft permit or the revised SEPA Threshold Determination.

Ecology evaluated the impacts of construction of the mixed waste disposal cell and disposal of the three waste streams during the threshold determination that the agency conducted in support of the draft permit. In addition to modifying the SEPA checklist that the Permittees had submitted, Ecology used information present in the *Tank Waste Remediation System EIS* that evaluated long-term storage of the ILAW on the Hanford Site in vaults to the east of the 200 East Area, a performance assessment that the Permittees prepared to dispose of ILAW in the

IDF location, a risk assessment that evaluated the waste form created by the DBVS, and the Mitigation Action Plan that the Permittees implemented for the permit. The SEPA evaluation did not limit wastes only to those in the permitted portion of the IDF. Based upon the information in the documents that the agency reviewed, Ecology determined that the construction of the MLLW cell and disposal of the three waste streams would not result in a significant adverse environmental impact. Ecology issued a Mitigated Determination of Non-significance (MDNS) based on the mitigation measures required in the SEPA document and the substantial mitigation measures issued as enforceable permit conditions in the IDF Permit.

USDOE Made False Statements in its Prior Application in Regard to the Potential to Contaminate Groundwater, Repeated and Relied Upon in Current Application and SEPA Checklist:

USDOE has already acknowledged in other documents that the massive landfill will cause significant groundwater contamination; and, that the cumulative impacts of the proposed additions to the soil, in combination with the wastes already disposed in the soil, will cause groundwater standards to be exceeded. Future releases that cause significant impacts arise from disposal of various wastes from the High-Level Nuclear Waste Tanks, High-Level Waste Vitrification melters, and maximum volumes of offsite waste..

However, in the first application for siting the Integrated Disposal Facility, USDOE stated that: "The low-level waste and mixed low-level waste that will be disposed/stored are not expected to result in increase of potential for release of mixed waste to the groundwater ...compared to existing conditions or to state or federal groundwater protection requirements." (IDF Application at 5; Sec. 2.5.1.3.2.3). This is demonstrably false.

USDOE has repeatedly acknowledged that various alternatives it is currently considering for wastes from the Hanford High-level Nuclear Waste Tanks (ILAW) may all violate standards – without considering the cumulative impacts. Furthermore, Ecology is required to consider the cumulative impacts on groundwater in its review of this application. USDOE has admitted that the cumulative impacts are significant, will violate standards, and will result in an "irreversible and irretrievable commitment" of the State's groundwater resource.

The initial IDF application also falsely certified that the "Justification of Need" for the facility is "to support Tri-Party agreement milestones by providing a means to dispose of low-level and mixed low-level waste on the Hanford facility." (sic, IDF Application, Sec. 4.0; Page 8).

The facility, however, is sized to meet the combined totals of all "Upper Bound" volume alternatives for additional wastes revealed in the Draft and Revised Draft HSEIS, including offsite wastes. The facility's total volume of 900,000 cubic meters happens to be the maximum volume of all potential wastes (from on-site and offsite) to be disposed in landfills on site considered in each "Upper Bound" alternative in the revised Draft HSWEIS.

Further evidence that USDOE does not intend to limit the use of the facility to onsite wastes generated by cleanup pursuant to the TPA or RCRA (or RCW 70.105) actions, is the fact that proposals for dangerous waste facilities to serve on-site cleanup needs are not required to submit an application for consistency with the State's Siting Criteria for Dangerous Waste Facilities. WAC 173-303-282 specifically states that the requirement to demonstrate compliance with siting criteria is not applicable to facilities for wastes from on-site cleanup.[xi]

Ecology has not held USDOE accountable for these false statements and claims. Instead, Ecology proceeded to allow siting and initial construction of the IDF landfill's first two massive units to proceed. When the underlying documents and notices to the public include false statements, Ecology has a duty to ensure new notice cures these falsehoods and that the applicant is held accountable. Instead, USDOE has been rewarded by Ecology.

ECOLOGY RESPONSE: Comments noted.

Ecology reviewed the Notice of Intent (NOI) that the Permittees prepared in compliance with WAC 173-303-282 of the Dangerous Waste Regulations. In Section 2.5 of the NOI, the

Permittees presented information about how they would comply with the siting criteria in the regulations. They informed Ecology that the IDF would be constructed as a double lined landfill that would achieve compliance with the Resource Conservation and Recovery Act (RCRA) through establishment of a contingent groundwater ground water protection program.

Ecology confirmed that the IDF is not located above a sole source aquifer as designated under the Federal Drinking Water Act, Section 1424(e) (Public Law 93-523); within a special protection area as designated by Ecology under RCW 90.48; within a groundwater management area proposed or certified by RCW 90.44.130; or less than 50 feet above the seasonal high water level of the uppermost aquifer of beneficial use.

In keeping with previous decisions and comments that Ecology sent to the US Department of Energy on the revised draft of the *Hanford Site Solid (Radioactive and Hazardous) Waste Program Environmental Impact Statement*,[2] and subsequent requests for preliminary injunctions that the State made,[3] Ecology did not agree that the Permittees could dispose of wastes from other sites in the IDF. As the commenter noted, the State filed for to expand a preliminary injunction granted in Washington v. Bodman to prevent the Permittees from shipping LLW and MLLW from other sites to Hanford for disposal.[4] The Court enjoined the Permittees from shipping offsite LLW and MLLW to Hanford in support of the State's motion, giving the State 90 days to conduct discovery.[5] On July 22, 2005, the USDOE filed a Notice Regarding NEPA Analysis and Discovery Deadline in the United States District Court for the Eastern District of Washington (No. CT-03-5018-AAM). In the Notice, the USDOE informed the Court that recent developments in the analysis of groundwater cumulative impacts in Appendix L of the Final HSW EIS and certain input parameters in the System Assessment Capability (SAC) led them to undertake an investigation of the inconsistencies. Ultimately, the State of Washington and USDOE entered into a settlement of the litigation under which USDOE has agreed to no longer rely on the groundwater impacts analysis in the HSW EIS and to not ship off-site waste for disposal at Hanford until a new NEPA EIS is completed and appropriate Record(s) of Decision are issued.

As explained above, Ecology will not consider any additions to the mixed waste portion of the IDF until the Permittees submit a permit modification, with the analyses and assessments listed above. Two of the three waste forms for which Ecology granted the draft permit will be generated by processes that will treat Hanford tank waste on site. The treatment of the tank waste will result in a resilient waste form that will be protective of the environment and human health. The other waste form (resulting from the operation of the IDF) cannot be disposed in the IDF if it would require any form of treatment before land disposal.

Per the final permit application, the facility is not sized to meet the upper bounds of the HSW EIS. The IDF as currently planned and permitted is roughly 1/3 that size (two cells of 82,000 m^3 total capacity each).

Ecology's Current Notice Was Legally Inadequate, and Continued the Prior Failures to Disclose that the IDF Is Planned for 12.7 Million Cubic Feet of Offsite Waste:

Ecology's notice for the current permit application and SEPA Determination continues with the inadequate notice to the public that the IDF landfill will be used for the controversial disposal

[2] DOE 2003 Letter, Tom Fitzsimmons to Michael S. Collins, dated June 10, 2003.
[3] State of Washington, Complaint for Declaratory and Injunctive Relief, March 3, 2004 (related to receipt and storage of transuranic and transuranic mixed waste)
[4] State of Washington, Memorandum of Points and Authorities in Support of Motion for Expanded Preliminary Injunction, No. CT-03-5018-AAM, August 16, 2004.
[5] United States District Court Eastern District of Washington, Order Granting Motion to Expand Preliminary Injunction *Inter Alia*, May 13, 2005, p. 67

of offsite waste – in violation of both State and federal policies against adding more waste to a contaminated site and policies against adding offsite wastes where the cumulative impacts from disposal are likely to increase cumulative impacts to groundwater and health from the site.

The current Notice (May, 2005) acknowledges that LLW may be disposed in IDF, but fails to provide any notice to the public of the controversial use of IDF for offsite waste. As described in these comments, USDOE has formally adopted a plan to use IDF for 12.7 million cubic feet (360,000 m3) of offsite waste, of which over 7 million cubic feet will be offsite LLW (and will include extremely radioactive LLW, including Remote Handled LLW and waste which is reclassified from High-Level Nuclear Waste). Yet, Ecology's notice merely states:

> *"Low-level radioactive wastes (typically gloves, tools, etc. that are contaminated with radionuclides) may also be disposed in this facility. Ecology does not have permitting authority over low-level radioactive waste."*[xii]

This notice is legally inadequate, and deliberately misleading. The SEPA DNS and Permit must be withdrawn and reissued with proper notice. As described herein, the issuance of a DNS is not appropriate since there is no mitigation of known probable, significant impacts from the full formal plan of the project applicant (USDOE). Inadequacies of the notice requiring mailing of notice to all interested persons include:

- *Failure to provide notice that the project will be used for offsite waste;*
- *Failure of the SEPA Checklist and Notice to disclose the quantities of offsite waste proposed (in a formal plan) to be disposed in IDF;*
- *Failure to provide public notice that use of the IDF for offsite waste as proposed by the applicant will conflict with state and federal policies on disposal of offsite waste at Superfund and mixed waste contamination sites such as Hanford;*
- *Failure to provide the public with notice and failure to disclose in the SEPA checklist that Ecology has already determined that the full project as proposed will have significant probable impacts to health and the environment;*
- *Failure to notify the public and disclose in the SEPA checklist the existence of formal plans to use the IDF landfill for extremely radioactive LLW and mixed wastes, and that the extremely radioactive LLW may be disposed before there is any adequate consideration of the cumulative impacts of the entire landfill, if the permit is granted;*
    - *The representation in the notice that the LLW disposed in the facility will "typically" be akin to gloves is false and without any basis in the record; and, it fails to disclose known plans to dispose of LLW with extremely high levels of radioactivity, including reprocessing wastes, reactor and processing components, etc…*
- *Failure to mail notice to all persons known by Ecology to be interested in the project – in violation of Ecology's rules.*
    - *Ecology has a duty to mail notice of the IDF SEPA Determination and Permit to all persons who commented on the IDF landfill and related proposals for import of waste to Hanford under USDOE's Draft and Revised Draft Hanford Solid Waste Environmental Impact Statement. Ecology was consulted and a cooperating agency for that EIS, and Ecology had notice of the interest by thousands of individuals, organizations, members of Congress, Tribes and agencies who commented on the IDF landfill and related plans in the HSWEIS.*
    - *Ecology's notice distribution for the IDF landfill was pathetic – especially after we objected to the lack of notice given in the prior two attempts to adopt a SEPA Determination of Non-Significance and, we repeatedly urged Ecology to mail to all the commentors on the IDF and related issues in the HSWEIS process. The failure to provide meaningful notice of the true character of the proposal , or even the size of the facility violated the public's rights to meaningful notice intended to provide a reasonably interested person with notice of the full scope of the project and known issues relating to potential impacts.*

- *Ecology's notice was legally inadequate by failing to identify that the proposed project is not solely for on-site cleanup wastes, but includes 12.7 million cubic feet of offsite waste. Ecology has misled the public by providing notice which was designed to appear that the IDF is solely for on-site cleanup wastes. This repeats the same intolerable notices that we objected to in December, 2003 and September, 2004.*
  - *There is not one word in the notice or the SEPA Checklist revealing that the proposed formal plan of the applicant is to use the facility for offsite waste.*

- *Adding insult to injury, and making it nearly impossible to comment on the Draft Permti and application,* ***the full Draft RCRA permit and the permit application can only be reviewed in the libraries, presumably for security reasons.***
- ***There is inadequate documentation on the design, construction specifications and quality assurance for the IDF.*** *This information, vital for informed review, is simply unavailable. The lack of availability violates Ecology and state SEPA and permit rules.*
  - *There are no engineering justification reports or design configuration report similar to that of Envirocare (2001b). Part of the reason for this is that much of this documentation was prepared for the previously separate disposal facilities that were integrated in the creation of the IDF. Documentation of technical requirements and system specifications and the performance assessment for ILAW waste, for instance, are referenced in the Draft RCRA permit because they are applicable to the IDF. A conceptual design report for the ILAW waste (RPP-7908) is referenced in the IDF permit but was not available for review.*
  - *SEPA requires that referenced documents be available for review.*

Ecology has failed in its fundamental duties to the public by failing to provide notice of the full plan for IDF, failing to provide notice to all interested persons, and falsely mischaracterizing the nature of LLW which will be disposed in the IDF. These failures come after the Hanford Public Interest Network organizations and Heart of America Northwest repeatedly objected to similar inadequacies in Ecology's two prior notices for the IDF SEPA Determinations. The notice must be withdrawn and reissued in a manner that provides the interested public with meaningful notice (including mailing to all interested persons).

ECOLOGY RESPONSE: Ecology issued a notice for the draft IDF permit and SEPA decision by mail to the 890 people on the Hanford "Highly Interested" mailing list and by email to the 655 people on the Hanford-Info Listserv. The notice was also published in the "Tri-City Herald" on May 6, 2005. In addition, the notice was published on the Nuclear Waste Program web site.

Ecology is permitting a single LLMW cell of the IDF for receipt of vitrified waste (to render it less likely to exit the facility and reach the groundwater) and small quantities of waste that do not require treatment before disposal.

As also noted above, Ecology will not allow expansion of the IDF or receipt of any mixed waste streams, without a Permittee-initiated request for permit modification. That modification must be accompanied by an analysis sufficient to allow Ecology to evaluate the impacts to the environment and human health, a risk assessment, and groundwater modeling that shows the environmental impact.

Notification of the Mitigated Determination of NonSignificance (MDNS) that accompanied the draft permit appeared in the SEPA register. Copies of the MDNS are available to any member of the public who requests them from Ecology.

With respect to the commenter's assertion that SEPA requires referenced documents in the permit be available for review, the assertion is not factually accurate. There is a requirement for **environmental documents** to be available to the public, per WAC 1970-11-504. Subsection (1) requires that SEPA documents required by the rules be retained by the lead agency (here, Ecology) and be made available per RCW 42.17. Ecology must make copies of the environmental document, charging only for the costs for copies plus mailing. An environmental document is any written public document prepared under WAC 197-11, which includes environmental checklists, determinations of significance, notices of intent, environmental impact statements, determinations of nonsignificance, and mitigated determinations of nonsignificance (see WAC 197-11-744). Further, the terms environmental analysis, environmental report, and environmental assessment do **not** have specialized meanings in WAC 197-11 and do not refer to particular environmental documents. Design, construction specifications, and quality assurance documents supporting the draft permit are not environmental documents; hence, SEPA does not require that they be available.

Ecology does not intend to withdraw and re-issue the MDNS. Ecology performed a thorough review of information available and found that the mitigation measures and limit of waste forms were sufficient to allay significant adverse impacts to the environment and human health.

Portions of the permit were redacted as part of increased security measures the Federal government took in response to the attack on the United States that occurred on September 11, 2001. Per the information provided in the draft permit, any person wishing to obtain that information may contact Ecology.

Ecology is required to reject the application of USDOE for Siting of the Landfill and to reject the SEPA Checklist submitted by USDOE:

An EIS is required for all projects having a probable significant impact on human health and the environment (under both the National Environmental Policy Act, which applies to USDOE, and the State Environmental Policy Act, RCW Chapter 43.21C).

USDOE has previously and repeatedly acknowledged that the import of 13 million cubic feet of waste for burial at Hanford requires an EIS, and that a decision to open a new landfill that would double the amount of radioactive waste in Hanford's soil requires an EIS. Where USDOE has attempted to evade this requirement, federal courts have agreed with Washington State and citizen groups that an EIS is required before waste can be imported to Hanford for burial. USDOE has also acknowledged that it is required to prepare an EIS on its proposal to landfill dispose of unvitrified wastes from Hanford's High-Level Nuclear Waste Tanks (and vitrified wastes as well).

Washington State acknowledges that the Hanford Solid Waste Disposal EIS is legally inadequate in regard to the cumulative impacts from the IDF landfill (offsite wastes and secondary wastes from vitrification of High-Level Wastes are key components of these cumulative impacts)and the Hanford Tank Waste Closure and Supplemental EIS has not been issued, which USDOE says will consider the impacts from disposal of secondary wastes in IDF.

Therefore, there has been no consideration of either the cumulative impacts or the impacts from key components of the existing plan for IDF. However, many of those impacts may occur before either the USDOE issues its Tank Closure EIS or there is any further consideration of cumulative impacts if the IDF proceeds under the proposed permit – since large quantities of offsite waste will be disposed in the LLW cell before such consideration (and USDOE may import MW, and store the imported MW expecting disposal, since the permit does not specify that offsite Mixed waste is barred due to the impacts of adding such wastes to the cumulative impacts of the facility).

In numerous documents, USDOE has admitted that the proposed disposal of unvitrified waste from Hanford's High-Level Nuclear Waste Tanks will have significant impacts on groundwater, and potentially, the Columbia River. In documents describing the alternatives to vitrification that it is considering, ORP acknowledges that several of the alternatives are likely to cause violation of groundwater standards.

USDOE cannot proceed with any state approval for this massive landfill on the basis of a SEPA checklist, rather than an adequate EIS. A SEPA checklist is a tool for making the threshold determination of whether a project may have probable significant impacts. This landfill has already been determined to have such impacts, and the transport of waste to the landfill has also been found to have significant impacts.

Pursuant to RCW Chapter 43.21C and WAC 173-802-110, the Washington Department of Ecology must reject the SEPA checklist and deny the applicant approval of its proposed siting. WAC 173-802-110 explicitly applies to decisions to provide any form of approval for a project, in addition to granting of final permits. The criteria for rejecting this application is clearly spelled out in the Washington Administrative Code, since: a) the applicant has acknowledged in other documents that the project will have significant impacts; b) Washington Ecology has issued formal comments detailing probable significant impacts from this proposal; and, c) USDOE has failed to provide any plan that would mitigate those impacts so as to render them not significant.

Ecology has a duty to: "Deny the permit or approval for a proposal if reasonable mitigation measures are insufficient to mitigate significant adverse environmental impacts and the proposal is inconsistent with the policies in subsection (1) of this section." WAC 173-802-110(2)(b)(ii). For this landfill and the proposal to import waste, for which the landfill is designed, Washington State and Ecology have already issued formal comments and taken formal positions that the fundamental and inalienable right to a healthful environment will be impacted by the full plan and project; and, that USDOE has failed to provide detailed mitigation plans (i.e., fails to limit offsite waste, fails to limit total contamination below MTCA and other standards when all waste types are considered, failure to set waste acceptance criteria for the entire landfill which are enforceable and include total Iodine 129, Technetium 99, and other contaminant of concern limits). Thus, pursuant to the authority of the Department under the State Environmental Policy Act, the Department must reject both the SEPA checklist and the permit application.

ECOLOGY'S RESPONSE: Comments noted. As stated above, Ecology conducted a phased environmental review of the IDF and its impacts on the environment and human health. That review addressed the addition of vitrified wastes from the Waste Treatment Plant (WTP) and the DBVS, as well as small quantities of mixed waste generated at the IDF that will not require treatment prior to disposal. Ecology did not attempt to evaluate receipt of MLLW from offsite because that waste cannot be added to the single cell that Ecology is permitting now. Any disposal of such waste depends on a fully independent future decision.

As the commenter stated, Ecology expressed its dissatisfaction with the cumulative analyses in the *Hanford Solid Waste Environmental Impact Statement*. Extensive information about the performance of the two vitrified waste forms and the environmental impacts was available in sources other than the *Final HSW EIS*. Ecology used those sources to make its determination about the potential impacts on the environment that would result from disposal of the three waste forms.

Ecology chose to limit the waste forms and characteristics that could be disposed in the first cell to those that would be least likely to degrade rapidly or present an immediate threat to the environment and human health (i.e., vitrified waste and waste that will not require treatment prior to land disposal).

Ecology evaluated the SEPA checklist provided by the Permittees then made modifications to reflect the scope of the activities that the draft permit allows. With those changes, Ecology documented the specific waste streams and activities that the draft permit allows. Ecology will not reject the Permittees' SEPA Checklist because no need to do so exists.

Washington State Has Had Notice of USDOE's Proposal to Use the IDF Landfill For West Valley Site Waste, Including High-Level Nuclear Wastes, Which USDOE Proposes to Reclassify for Disposal in IDF.

Ecology Violated SEPA, Cleanup Priority Act and Other Notice Provisions by Failing to Provide Public Notice of this Proposed Use of the IDF Landfill

Washington State has had notice from the USDOE of its proposal to import MW, LLW, TRU and High-Level Nuclear Waste to Hanford, and to use the IDF landfill for disposal of each of these (except TRU, which USDOE says it would store, rather than dispose). USDOE proposes to reclassify certain unvitrified, extremely radioactive High-Level Nuclear Wastes remaining at West Valley as "wastes incidental to reprocessing" ("incidental wastes") so that these wastes may be disposed at Hanford. USDOE has now (June 16, 2005) formally adopted its "preferred alternative" to reclassify these High-Level Wastes and pursue their disposal at Hanford, along with LLW and MW.[xiii] *Likewise, USDOE has formally adopted its proposal to seek to "store" Remote-Handled and other TRU wastes at Hanford.*[xiv]

These TRU wastes are not acceptable at the WIPP Repository for TRU wastes in New Mexico, due to statutory restrictions. Thus, if USDOE chooses to send them to Hanford, as USDOE now asserts it has both NEPA coverage and a formal record of Decision allowing it to pursue, these TRU wastes will likely never leave Hanford and are likely to be either disposed or "stored" in the LLW portion of the IDF landfill. [xv]

The reprocessing wastes at West Valley include extremely high activity wastes, and wastes with similar iodine and technetium components as those reprocessed Hanford High-Level Nuclear Wastes for which Washington State has objected to disposal in IDF.

USDOE should have disclosed and considered the cumulative impacts of all proposals for disposal of wastes in IDF, including West Valley wastes, in the Hanford Sold Waste Disposal EIS. Because that EIS is legally inadequate, it can not be adopted for SEPA purposes by Washington Ecology.

Therefore, before Washington Ecology can issue any permit which allows construction of the full IDF landfill to proceed and be operated, Ecology must consider the cumulative impacts from all related proposals – which include the formal proposal to use IDF for West Valley wastes. To do so, Ecology must either have precluded disposal of offsite wastes and any unanalyzed wastes which may lead to violation of MTCA and other standards, or issue a SEPA complaint EIS.

Furthermore, under SEPA and Washington Ecology's rules, Ecology had a duty to disclose in its notice the existence of USDOE's proposal to use the IDF landfill for West Valley wastes, along with other USDOE proposals – which Washington State has previously acknowledged to have significant probable environmental and health impacts.

Since Washington State has adopted a policy opposing USDOE's unilateral reclassification of High-Level Wastes for near surface disposal (i.e., in a landfill), Ecology had a duty to disclose and consider that the IDF landfill is proposed for disposal of such wastes.[xvi] *The failure to consider the impacts of reclassification – in violation of the policies adopted by Governor Gregoire, and prior adopted policies of Ecology – is a failure to disclose and consider impacts of a major policy proposal and action which can only occur if Ecology permits the IDF landfill. Further, the nature of the wastes from West Valley gives rise to the same type of concerns that Ecology has raised over near surface / IDF disposal of similar Hanford High-Level Nuclear Wastes, which USDOE has proposed to reclassify, and to the same types of concerns regarding assumptions relating to the iodine and technetium content of reprocessed wastes which Washington has raised in objection to USDOE's Hanford Solid Waste Disposal EIS.*

As early as 1999, USDOE's own analysts and Pacific Northwest National Laboratory concluded that vitrification of liquid High-Level Nuclear Wastes from reprocessing was unlikely to capture 95% of the Iodine 129 and much of the Technetium and numerous volatile contaminants of concern. These high risk contaminants would then end up in secondary waste streams sent to Hanford's landfills. However, the HSWEIS failed to disclose the existence of these studies and arbitrarily and capriciously assumed that 95% of the Iodine 129 would be captured in the vitrified High-Level Waste, rather than disposed of in the IDF landfill. This was significant because it was determined that the Iodine 129 was a bounding contaminant – its presence in larger quantities would cause groundwater contamination in excess of the standards which USDOE was applying to the landfill (which, as we discuss elsewhere, are inappropriately loose and not protective standards – USDOE applies standards to the IDF landfill LLW section which are at least 25 times less protective than required to be considered under WA law). WA State discovered that USDOE's contractors for the High-Level Waste Tank Closure EIS (pending) had concluded that 95% of the Iodine would not be entrained in vitrified waste and that this would create a contaminant of concern for the IDF landfill. Therefore, WA has refused to acknowledge that the HSWEIS is adequate due to failure to consider the impacts of disposal of these secondary wastes in IDF.

USDOE admitted in 1999 that Iodine would not be captured in the vitrified waste, and would end up buried in Hanford's soil. The wastes with the Iodine from the High-Level Waste Taks is now proposed to end up primarily in IDF. However, USDOE failed to disclose in the HSWEIS:

> *"The volatile character of iodine implies it will not be captured in a vitrified high-level waste and subsequently exported from the Hanford Site."*[xvii]

The failure to consider the impacts of Iodine and other contaminants from Hanford's High-Level Waste reprocessing is directly relevant to the failure of USDOE (and now, Ecology under SEPA) to disclose and consider the cumulative impacts from disposal of reprocessed High-Level Wastes from West Valley. There is no record to indicate that the Iodine, Technetium, volatile and other contaminants of concern are not also present in the same manner in West Valley High-level Wastes, and the wastes left over from vitrification, which USDOE now proposes to reclassify as "incidental" for disposal at IDF.

It is a violation of SEPA to permit the IDF landfill, since this permit would allow the operation and receipt of the West Valley and untold other LLW wastes without adequate consideration of the cumulative or waste stream specific impacts. There is no mitigation proposed in the SEPA Determination, nor in the proposed permit, which would avoid the unconsidered impacts of adding offsite LLW from West Valley to the IDF landfill, including High-Level Nuclear Wastes renamed by USDOE as "incidental" wastes. These LLW alone might consume the available risk budget, or a significant portion of that risk budget, preventing use of the landfill for on-site cleanup wastes. It is the policy of the State of Washington that the cleanup of on-site wastes should not be hindered or made more difficult by the addition of offsite wastes.

ECOLOGY RESPONSE: Ecology has issued a draft permit to accept only three waste streams that are explained in exhaustive detail in previous comments. The permit does not allow the Permittees to dispose of any other waste form or waste stream, regardless of origin, with a formal request for permit modification and transmittal of added information (again, explained above). Ecology is not aware of any plans to dispose of transuranic waste in the IDF. The USDOE disposes of TRU waste at a geologic repository in New Mexico; Ecology has no plans to allow such waste to be disposed at the Hanford Site. How the USDOE disposes of offsite TRU wastes not generated at the Hanford Site is not germaine to the permitting of the IDF because TRU waste will not be disposed in the IDF.

Ecology noted that in Alternative B in the *West Valley Demonstration Project Waste Management EIS* the USDOE considered shipment of transuranic (TRU) waste to one of five interim **storage** sites, including Hanford, and shipment of high level waste (HLW) to Savannah

River or Hanford for interim storage. Ecology submitted comments that objected to the US Department of Energy's plans in Alternative B. In the Record of Decision (ROD) that the USDOE issued for the WVDP EIS on June 16, 2005 (70 FR 35077 ff), the USDOE agreed that partial implementation of Alternative A would be the preferred alternative. That alternative assumes continued storage of HLW on the WVDP site until the USDOE can transport it to a geologic repository for disposal. The USDOE chose to defer a determination on TRU waste pending a determination that all of the waste meets the Waste Isolation Pilot Plant criteria.

In the WVDP ROD, the USDOE stated plainly that any shipments of LLW and MLLW would be subject to the limits of the June 2004 ROD on the Final HSW EIS. That Final ROD stipulated that the USDOE would ship a total of 62,000 m^3 of LLW and 20,000 m^3 of MLLW from other USDOE sites to Hanford.

The Final HSW EIS ROD stated that the LLW and MLLW may result from the USDOE's determination that the waste is incidental to reprocessing through evaluation. If the USDOE makes the determination that a waste is incidental to reprocessing, that determination will not automatically allow the Federal agency to send that MLLW to the IDF. As stated above, any MLLW that the USDOE proposes to add to the IDF must await a permit modification. Ecology has no intention of foregoing its right to review the waste form or of abrogating its responsibilities to permit the IDF as a MLLW land disposal facility.

Ecology had no duty to "disclose" that TRU and HLW would be disposed in the IDF because in the WVDP EIS, no alternative discusses such disposal, nor has Ecology ever considered such a plan. Ecology has no plans to allow TRU or HLW from other sites to be stored for the long-term in the IDF, either.

As for the offsite waste that was not analyzed by the HSW EIS, additional NEPA and SEPA analyses and reviews would be required before this waste could be disposed in the LLW cells and /or the MLLW cells of IDF and before the permit could be modified to accept this waste.

As noted above, the USDOE must submit a permit modification, analyses sufficient for SEPA, a risk assessment and groundwater modeling to show the environmental impacts for any waste not now permitted for MLLW disposal at the IDF. Disposal of any MLLW waste from West Valley or other USDOE sites is not allowed by the draft permit. Ecology will not allow any offsite MLLW waste disposal in the permitted portion of the IDF without further evaluation of the impacts of disposal.

The Proposed Permit and SEPA Determination of Non-Significance Violate Provisions and Policies of the Cleanup Priority Act:

Ecology Has Also Failed to Meet SEPA Requirements to Consider the Impacts of Violating the Federal Offsite Waste Rule as Well as Parallel State Policies:

The Cleanup Priority Act, RCW Chapter 70.105E, has express requirements for Ecology to consider impacts and standards for SEPA Determinations, risk assessments and permit decisions relating to new mixed waste landfills and landfills at facilities with illicit unlined mixed waste landfills which are contaminating (or threatening to contaminate) the environment. Amongst the most relevant of these standards, is the requirement that Ecology expressly consider whether risk assessments for a proposed mixed waste landfill (or landfill at a mixed waste site with ongoing non-compliance) show that the landfill will not violate the cleanup standards under the Model Toxics Control Act (MTCA, RCW Chapter 70.105D). There is no

record of Ecology considering these standards and requirements in making its SEPA Determination and Ecology staff have acknowledged that these standards were not considered in either the SEPA review or the permitting of the IDF landfill.

Due to failure to consider the specific standards and impacts referenced in the Cleanup Priority Act, the SEPA Determination is arbitrary, capricious and violates applicable standards under both SEPA and the Cleanup Priority Act (CPA).

How Ecology could ignore the new Cleanup Priority Act provisions – adopted by Washington's voters with the largest vote in the history of Washington State – is something that Ecology management must answer to the public. The public has repeatedly raised the concern that USDOE failed to consider MTCA standards in the Hanford Solid Waste Disposal EIS, and that this was one of the serious inadequacies of that NEPA document (which, therefore, precludes reliance upon the HSWEIS for SEPA purposes).

SEPA requires that all relevant standards be considered in determining if a proposed project may have a probable significant impact on human health or the environment, even if those standards are not directly enforceable at the moment, or applicable by Ecology. There is no doubt that the Cleanup Priority Act has standards, including a requirement to utilize MTCA's standards, which Ecology is legally required to consider in determining if a permit for a mixed waste landfill at Hanford has probable significant impacts. Violation of a relevant standard, or levels of contamination which approach the limits of a relevant standard designed to protect human health, is a per se significant impact under both NEPA and SEPA. Ecology had a pre-existing duty (prior to passage of the Cleanup Priority Act) under SEPA to consider these same standards (e.g., the MTCA standards) in SEPA Determinations for a landfill at a mixed waste facility with ongoing releases and non-compliance for existing mixed and hazardous wastes. Thus, even if a court injunction against enforcement at Hanford of the Cleanup Priority Act were to extend to Ecology's internal consideration of CPA standards in making its SEPA Determination, Ecology had a duty to consider the pre-existing standards under MTCA for the IDF landfill and SEPA Determination. The Cleanup Priority Act repeated in statute the existing duty and authority of Ecology to consider whether MTCA standards would be violated by a landfill. Further, the federal court injunction against the enforcement of the Cleanup Priority Act pending determination of the challenge to the Act does not extend to preclude Ecology from considering all relevant standards under SEPA (which even includes standards that Ecology does not enforce).

The Cleanup Priority Act adopts in statute the State policy that Cleanup is the top priority for sites with contamination that threatens waterways and health. Therefore, consistent with this new policy, I-297 bars adding more waste to such sites if they are not in compliance with applicable standards. Adding more waste detracts from cleanup – which Washington State has asserted in federal court already. This policy is what the courts must consider when interpreting the initiative.

SEPA requires that Ecology consider whether actions which will occur as a result of granting the permit for the proposed project will violate either the policies established in the Cleanup Priority Act, pre-existing policies against adding more waste to Hanford until existing contamination is cleaned up, and consistency with the federal Superfund policy and provisions barring the addition of offsite wastes to contaminated Superfund sites such as Hanford. USDOE has failed to ever consider either these State policies or the federal policy, known as the Superfund Offsite Waste Rule, 42 USC 9621(d)(3). EPA summarizes this policy in its fact sheet and the preamble to the rule implementing the statute as follows:

> *"Section 121(d)(3) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) applies to any CERCLA response action involving the off-site transfer of any hazardous substance, pollutant or contaminant (CERCLA wastes). That section requires that CERCLA wastes may only be placed in a facility operating in compliance with the Resource Conservation and Recovery Act (RCRA) or other applicable Federal or State requirements. That section further prohibits the transfer of CERCLA wastes to a land disposal facility that is releasing contaminants into the environment, and requires that any releases from other waste management units must be controlled. These principles are interpreted in the Off-Site Rule (OSR), set forth in the National Contingency Plan (NCP), at 40 CFR 300.440. The purpose of the OSR is to avoid*

having CERCLA wastes from response actions authorized or funded under CERCLA contribute to present or future environmental problems by directing these wastes to management units determined to be environmentally sound (preamble to final OSR, 58 FR 49200, 49201, Sept. 22, 1993)."

The policy of ensuring that a landfill at a Superfund site does not "contribute to present or future environmental problems" at that site by adding offsite wastes is one which USDOE was required (but failed) to consider in both its Waste Management Programmatic EIS and the Hanford Solid Waste Disposal EIS. Since it was not considered adequately in any other environmental review, Ecology is legally bound to consider the impacts of violation of this policy in an environmental impact statement for the IDF landfill, since there is no dispute that the proposed permit and related actions will enable USDOE to add large quantities of offsite waste to the IDF landfill. A permit condition which limits offsite mixed waste is not adequate under SEPA, when there is no consideration of the cumulative impacts and whether the addition of offsite LLW wastes will preclude use of the landfill for all necessary MW from cleanup.[xviii]

RCW 70.105E.020(6) establishes a clear state policy requiring that Ecology consider whether the IDF landfill – including both the LLW and MW proposed to be dumped in the IDF landfill, and considering both on-site and offsite wastes proposed to be disposed in the IDF landfill – will violate the standards for human health and the environment in the Model Toxics Control Act (MTCA, RCW 70.105D). The voters clearly included this requirement as a backstop in state law for mixed waste sites due to fear that Ecology was not, or would not, consider and enforce existing rules and standards in making decisions at Hanford when faced with opposition from the USDOE. Amongst the rules and standards which USDOE opposes application to Hanford (and which USDOE refused to consider in the HSWEIS in reference to the IDF landfill) are the standards in MTCA requiring that all carcinogens from a site which releases, or threatens to release, contamination to the environment not have a total cumulative impact exceeding more than one additional cancer for every one hundred thousand exposed persons. Under MTCA, all carcinogens includes radionuclides. However, while USDOE has failed to consider whether this standard would be violated by release from IDF in the future, MTCA, SEPA and the new Cleanup Priority Act require that Ecology consider whether these MTCA standards may be violated by the IDF landfill. This is a substantive requirement for permitting of the IDF under the CPA, and is a procedural and substantive requirement under SEPA which must be undertaken at this time. Issuance of a Determination of Non-Significance under SEPA does not comport with the duties for Ecology to disclose these impacts for public review and comment in an environmental impact statement.

The sole health risk standard utilized in USDOE's Performance Assessment for the IDF Low-Level Waste Disposal Units is USDOE's own self-regulatory standard of an allowable dose of 100 millirem per year (100 mr/yr) to potentially exposed individuals.[xix]

100 mr/yr translates to a fatal cancer risk of approximately 20 fatal cancers for every 10,000 exposed adults at a Superfund Site, under NRC and EPA calculations for risk assessments at Superfund sites and closure of licensed facilities. That is a risk of 2 fatal cancers for every one thousand exposed adults.

MTCA requires cleanup if the total risk from all carcinogens released from a site exceeds one in one hundred thousand.

The USDOE calculation is for exposed adults. EPA estimates that the risk of cancer in children is three to ten times greater than for adults for the same dose. [xx]

EPA has found that a 25 millirem dose from contamination at a Superfund Site is "not protective of human health."[xxi]

Washington State's policy is designed to avoid creating new MTCA or Superfund cleanup sites when making permitting decisions for new landfills. If cumulative impacts from the new landfill may exceed MTCA standards, then the landfill is only creating a new cleanup site for our children – and, a per se significant impact under SEPA.

If the IDF landfill is to remain within MTCA standards, it can not have LLW units which comprise 50% of its capacity and which are analyzed only in regard to whether they result in a

dose of 100 mr/yr. That standard is not only "not protective of human health", but so far outside the bounds of the Washington State MTCA standard as to create a likelihood that disposal in the LLW portion of the landfill will consume all available disposal capacity from a risk budget. Ecology has a legal duty to consider the cumulative impacts of all wastes proposed to be disposed in IDF and whether the cumulative impacts may exceed the relevant MTCA standards.

Ecology has failed to consider and apply the specific standards of the Cleanup Priority Act which require consideration of the cumulative carcinogen exposures from a new landfill in reviewing environmental impact statements, conducting or reviewing performance and risk assessments for new landfills such as the IDF, and in performing its own SEPA analyses for new landfills:

> *(2) The department shall include all known or suspected human carcinogens, including radionuclides and radioactive substances, in calculating the applicable clean-up standard, corrective action level,* ***or maximum allowable projected release from a landfill or other facility or unit at which mixed wastes are stored, disposed****, or are reasonably believed by the department to be present, for purposes of chapter 70.105 RCW, this chapter, or chapter 70.105D RCW.* ***In making any permit decision pursuant to chapter 70.105 RCW*** *or this chapter,* ***or in reviewing the adequacy of any environmental document*** *prepared by another state, local, or federal agency, relating to mixed waste sites or facilities,* ***the department shall ensure that the cumulative risk from all such carcinogens does not exceed the maximum acceptable carcinogen risk established by the department for purposes of determining clean-up standards pursuant to RCW 70.105D.030, or one additional cancer caused from exposure to all potential releases of hazardous substances at the site per one hundred thousand exposed individuals, whichever is more protective****.*
>
> *RCW 70.105E.050(2). Emphases Added.*

Ecology has not ensured that cumulative risks from all carcinogens which may be released from the IDF landfill will not exceed the MTCA standards.[xxii] *In fact, the proposed permit fails to: a) mention MTCA standards; b) establish permit conditions which specify that the cumulative carcinogen risks, including all radionuclides and other carcinogens, will not be allowed to exceed a total carcinogen risk of one in one hundred thousand. This permit condition must be applied to the entire landfill, and can not be deferred to insertion if future amendments create a likelihood of exceeding the limits. Limits and waste acceptance criteria must be established in the permit at this time to ensure that the relevant total carcinogen standards are not violated – and these waste acceptance criteria and limits must apply to all wastes disposed in the landfill.*

Ecology has full jurisdiction over any landfill in which hazardous wastes are disposed (including mixed wastes), even if the landfill also is used for solid wastes or other materials. IF the total cumulative impacts of all materials threatens to violate standards, then via SEPA mitigation measures and permit conditions, Ecology has a duty to restrict waste acceptance and set limits on the total quantities of wastes that may be accepted to ensure that the total "load" or "budget" for the facility is not violated. This principle applies to IDF and the 50% of its disposal capacity set aside for LLW. All releases from the LLW units will be hazardous constituents under the federal Superfund law and MTCA, requiring cleanup. Therefore, disposal in a mixed waste landfill is subject to cumulative impact assessments and limitations established by Ecology.

Ecology has:

- *failed to perform the cumulative impact analysis for carcinogens required by RCW 70.105E (which the public is entitled to see and comment upon in an environmental impact statement),*
- *failed to consider the policies relevant to the IDF landfill and acceptance of offsite waste under its SEPA mandate, and*

- *failed to consider in its SEPA Determination whether the cumulative impacts from the entire landfill will have a per se significant environmental and human health impact by creating a significant likelihood that the landfill will result in releases which approach or exceed MTCA standards.*

ECOLOGY'S RESPONSE: Comments noted. Ecology acknowledges that a proposal may have conflict with local, state or federal laws or requirements for the protection of the environment and that Ecology must perform a threshold determination process to evaluate if such proposals will result in significant adverse impact. The scope of the proposal and content of the information that Ecology used to evaluate the addition of the three waste streams to the permitted cell in the IDF did not reveal any violations of any laws or requirements that have been implemented to date.

Ecology understands the commenter's concern about receipt of CERCLA cleanup wastes for disposal at Hanford. That the IDF is designed to be a RCRA-compliant landfill does not allow the USDOE automatic approval to add wastes from off site. As stated above, any proposed additions of waste that the Permittees make must be submitted through a permit modification, with appropriate supporting information. As part of its phased environmental review, when the Permittees request addition of a new waste stream, they must do so within a permit modification. Submission of an application will begin Ecology's review of the waste form and quantities and the impacts of disposal. Without a permit for disposal of other waste forms, the Permittees may not add to the wastes already disposed in the IDF.

Ecology chose to evaluate the risk to the environment and human health through the SEPA environmental review and made its determination based upon appropriate risk assessments and existing environmental documents, referenced in the MDNS. Permitting the IDF does not constitute conducting a remedial action under Model Toxics Control Act, when SEPA and MTCA integration would be required by WAC 197-11 -250 through WAC 197-11-268. Ecology's phased review of the risks of disposal of the waste to be placed in the IDF under the conditions in the draft permit resulted in an MDNS.

On the Hanford Site, which is a Federal facility owned by a Federal agency, cleanup is conducted under the provisions of the Hanford Federal Facility Agreement and Consent Order. The HFFACO integrates the requirements in RCRA and CERCLA to manage active treatment, storage, and disposal facilities and to conduct cleanup. On the Hanford Site, the State invokes MTCA standards for closure under WAC 173-303-610(2)(b), and ensures that those standards and the most restrictive levels of other Federal and State laws become the cleanup action levels under CERCLA.

SEPA requires the state to determine whether there are probable significant, adverse environmental impacts associated with any permitting actions, and if so, analyse those impacts. To determine if significant, adverse, environmental impacts are likely to occur as a result of specific waste being disposed of in IDF, the state will consider various environmental parameters. These will include the environmental parameters utilized in the RBT. In the RBT itself, the state will consider environmental parameters including, but not necessarily limited to, MTCA cleanup standards and federal drinking water standards.

Ecology appreciates and has considered your comments concerning the Cleanup Priority Act (CPA). A Federal District Court has temporarily enjoined Ecology from implementing the CPA while the Court considers a legal challenge filed by the United States. Given the pendency of this litigation, Ecology will not provide detailed comments on the provisions of the CPA at this time. Ecology is fully committed to implementing the CPA if and when the Court lifts the injunction.

Ecology has a Duty to Consider and Disclose the Probable, Significant Impacts From Transporting Waste to the IDF Landfill:

"If you build it, they will come."

This principle is crucial for any decision to build landfill capacity – just as it is recognized under SEPA to apply to highways (if you build new capacity, the probable significant impacts which must be considered include the pollution and growth associated with attracting users of the new capacity).

USDOE has a formally adopted plan to dispose of 12.7 million cubic feet of offsite waste in IDF. This plan and proposal must be considered in Ecology's SEPA Determination for the IDF landfill permit. Consideration of the full plan can not be deferred by Ecology until some point in the future after USDOE has begun implementing the plan, because the waste will start coming to Hanford long before Ecology has ever considered the impacts of the full plan, unless Ecology considers them now.

IDF is designed for a capacity of 450,000 cubic meters of LLW and 450,000 cubic meters of MW. This far exceeds all projections of on-site waste requiring disposal from Hanford Clean-Up.

The duty to consider the impacts of the full plan are not erased by having a plan to phase construction, with the first East and West units having capacity of 180,000 cubic meters. SEPA requires that the entire project be evaluated at the time of the first state action which will allow the entire project to proceed. Indeed, in this instance, this becomes of the utmost importance because USDOE has formally stated that it intends to have imported and immediately use 13,000 cubic meters of capacity for offsite waste when the IDF landfill opens. This illustrates how a significant portion of the capacity may be devoted to offsite waste before the impacts of such use have ever been considered by Washington State and disclosed adequately to the public for comment.
The fact that the initial cell's capacity is less than the total amount of on-site waste which will be generated from cleanup and requiring disposal over the next twenty years does not eliminate the need to disclose and consider the impacts of using the capacity of the landfill for offsite waste – unless Ecology adopts conditions in the permit barring all offsite waste from the landfill. ***Ecology can, and should, adopt conditions barring all offsite waste from the IDF landfill, and limiting its future expansion to either: a) on-site wastes disclosed and considered in the HSWEIS; or b) the total quantity of waste which (with a reasonable cushion for error) will not result in any release (including in event of failure of institutional controls or intrusion) and exposure exceeding any standard, including specifically MTCA standards for carcinogen exposure.***

Significant, probable impacts from the current proposed decision to permit IDF, with a plan for use of half of the IDF capacity available for offsite waste (the LLW side) and no specific bar against adding offsite waste in the future for the MW side (in violation of the mandate of the Cleanup Priority Act), include:

- *USDOE's plan to import and use IDF for disposal of 70,000 truckloads of waste[xxiii] pursuant to USDOE's Preferred Alternative in the HSWEIS[xxiv]*
    - *70,000 truckloads is a conservative estimate of the number of trucks USDOE would use to ship 12.7 million cubic feet of radioactive and "mixed" radioactive and toxic chemical waste to be dumped at Hanford – the quantity disclosed in 2004 as USDOE's "preferred alternative" in the Final Hanford Solid Waste Disposal Environmental Impact Statement (Final HSWEIS).[xxv]*
- *The risks from "incident free transport" of the waste in the HSWEIS "Preferred Alternative" (relying on the IDF landfill for disposal capacity for these wastes) was estimated by USDOE to be nine adult cancer fatalities.*

- *The risks to children along the transport routes for shipment of waste to be disposed in IDF (or 'stored'), especially in Washington and Oregon, have never been considered by USDOE – and, never considered by Ecology. Ecology has a formal duty under SEPA to consider the risks to children from the impacts which will occur as a direct result of permitting IDF without limitation to on-site wastes.* ***Total fatal cancers, including children, were independently estimated to be 60 from shipping the quantities of waste to Hanford*** *in the Preferred Alternative. Ecology has been provided this independent analysis by Dr. Marvin Resnikoff.* [xxvi]
    - *US DOE has already attempted to truck RH-TRU wastes off interstate highways in Oregon along secondary roads that go directly past schools and community centers.*[xxvii] *Ecology must consider the potential impacts from exposure due to trucks leaving the interstate highway and increasing exposure and risks in communities, and to children, which USDOE impermissibly ignored. RH-LLW shipments are proposed by USDOE for disposal in IDF, posing the same risks of radiation exposure along the routes as is posed by RH-TRU.*
- *In the event of reasonably foreseeable accidents, fires or terrorist attacks involving a truck of waste heading to Hanford for disposal or storage at IDF, occurring in Bellevue or Spokane, WA (identified by USDOE as transport corridors for shipments to Hanford in the Final HSWEIS), or Portland, OR, the number of fatal cancers could reach 1,400*[xxviii] *and an area of 300 square miles could be contaminated requiring unprecedented evacuation and decontamination.*
    - *These impacts were documented using USDOE and NRC computer codes and data on shipping containers and shipment contents by Radioactive Waste Management Associates and Dr. Marvin Resnikoff.*
    - *USDOE has never considered the impacts of such incidents on Washington or Oregon routes.*
    - *Ecology has a duty under SEPA to consider the reasonably related impacts which may occur from a project which is being permitted by state action. In this case, transportation related impacts are directly related to providing disposal capacity for offsite waste.*
    - *USDOE's analysis of the transport impacts from the decision to open IDF and import waste to Hanford for disposal or storage is legally inadequate. For example, we have documented*[xxix] *that USDOE failed to consider any exposure to individuals within 100 meters of a truck fire or accident involving LLW or MW shipments to Hanford. Yet, most exposure in an urban setting such as I-405 at Bellevue or I-90 in Spokane, or I-205 in Portland, may occur to individuals within 100 meters of the truck. Such individuals may not be able to evacuate in a timely manner due to the congestion and traffic jam that would result from a collision, fire, etc… involving a radioactive waste shipment truck.*

Ecology has a duty under SEPA to consider the cumulative and direct probable, significant impacts flowing from any state decision to permit the IDF landfill and USDOE's proposal/plans to use the IDF landfill for offsite MW and LLW. USDOE's formal proposal is to sue the IDF landfill for offsite MW as well as LLW. Therefore, Ecology has a duty to disclose and consider the probable, significant impacts from the plan. As we have summarized here, and fully described in Heart of America Northwest's comments on the Hanford Solid Waste EIS (Revised Draft and initial Draft) and described in Hanford Advisory Board advice on IDF and offsite waste receipt at Hanford: significant, probable impacts include those from transporting wastes through Oregon and Washington due to the availability of capacity at IDF as planned by USDOE. These impacts have never been adequately considered by USDOE, so Ecology can not adopt the HSWEIS in this regard.

In December, 2003, we submitted the following comments on Ecology's proposed issuance of a Determination of Non-Significance for the IDF landfill in relation to the duty to disclose and

consider the transportation impacts from the proposed project. These comments have never been responded to, and are repeated here because they still apply (in fact, more is now known establishing that there are greater probable significant impacts, and the current SEPA checklist fails to address the same impacts described below):

> *RCW 70.105.210 and RCW 43.21C clearly give Ecology authority to consider these unresolved and unmitigated transportation impacts in its determination about whether the sting criteria has been met; and, whether to reject the SEPA checklist.*[xxx]
>
> *The IDF application, as noted in 3, above, falsely certifies that the "Justification of Need" for the facility is "to support Tri-Party agreement milestones by providing a means to dispose of low-level and mixed low-level waste on the Hanford facility." (sic, IDF Application, Sec. 4.0; Page 8). The facility, however, is sized to meet the combined totals of all "Upper Bound" volume alternatives for additional wastes revealed in the Draft and Revised Draft HSEIS, including offsite wastes.*
>
> *Ecology may either condition approval on use of the facility solely for on-site clean-up waste, or it must reject the application for failing to show need for such a high capacity.*
>
> *Because of the existing contamination, ongoing releases and violations of RCW Chapter 70.105 requirements; and the proposed location of the facility within the boundaries of a National Priorities List Superfund and State MOTCA hazardous waste release site, Ecology has unfettered authority to bar USDOE from using the facility for offsite wastes.*
>
> *At the time these comments were submitted, over 200,000 registered voters in Washington State had signed formal petitions calling for an end to the sue of Hanford's soil to dispose of waste from other nuclear weapons plants; and, calling for a change in State law to preclude any expansion or creation of new burial grounds for offsite waste under these circumstances. Ecology must consider these petitions as a form of public comment on this proposal (in fact, SEPA requires consideration of proposed legislative or other potentially pending actions).*
>
> *USDOE's SEPA Checklist is clearly inadequate by failing to disclose the transportation impacts from the proposed action, which is expected to result in over 70,000 truckloads of waste being transported to the site. Washington State has previously stated that such actions involve significant impacts that must be considered. The State is in receipt of extensive documentation from our organizations on these risks and impacts. USDOE states, in its SEPA Checklist, that it will take NO measures to reduce or control transportation impacts.*[xxxi] *Therefore, the State must reject the SEPA Checklist and the application.*
>
> *USDOE's failure to address the transportation concerns of the State of Washington, State of Oregon, Members of Congress, Tribes and the public, including the findings of the U.S. District Court for Eastern WA relating to transportation of RH-TRU which may be "stored" in the landfill, and which has similar risks to other wastes proposed for the facility, is shocking.*

Those comments from December, 2003, also included an unmet comment that Ecology use facilitated negotiation to reach an agreement with public interest groups and the public opposed to an unmitigated SEPA DNS and permit for the IDF landfill. Ecology must now hold the facilitated negotiations as we proposed in December, 2003:

1. ***Ecology is Required by State Law to Implement Negotiations on the Siting of this Landfill, and Can not Simply Ignore Our Concerns; Ecology Must Reject the Checklist and Application; and Should Sanction USDOE for False Statements or Omissions Contained Therein:***

Ecology can not simply ignore our concerns over the siting of this massive landfill. RCW 70.105.260 requires that the Department consider incorporating into any permits or approvals the results of any agreement to mitigate impacts negotiated pursuant to facilitated negotiations conducted under the authority of that statute.[xxxii] Ecology has a duty to seek to convene such negotiations, and, well knows, that we have the capacity, public support and will to challenge the approval of the landfill.

Note: Ecology did not meet the duty under the statute to seek facilitated negotiations as asked by citizen groups, by asking only local governments if they wished to have negotiations on the landfill. We have explicitly asked for such negotiations and conditioned our withdrawal of the request for public hearings on Ecology hosting a facilitated negotiation, which should be based on the use of "principled negotiation", establishing what principles are sought to be protected by state policies and citizens.

Washington's Department of Ecology, by proposing to permit the IDF without any consideration of cumulative impacts and transportation impacts, has abandoned its duty to consider the impacts of this project on Northwest residents[xxxiii], and abandoned its mandatory duty to protect our fundamental right to a healthful environment.

ECOLOGY RESPONSE: Ecology reviewed the Notice of Intent (NOI) that the Permittees prepared in compliance with WAC 173-303-282 of the Dangerous Waste Regulations. In Section 2.5 of the NOI, the Permittees presented information about how they would comply with the siting criteria in the regulations. They informed Ecology that the IDF would be constructed as a double lined landfill that would achieve compliance with the Resource Conservation and Recovery Act (RCRA) through establishment of a contingent groundwater ground water protection program.

Ecology confirmed that the IDF is not located above a sole source aquifer as designated under the Federal Drinking Water Act, Section 1424(e) (Public Law 93-523); within a special protection area as designated by Ecology under RCW 90.48; within a groundwater management area proposed or certified by RCW 90.44.130; or less than 50 feet above the seasonal high water level of the uppermost aquifer of beneficial use.

In compliance with WAC 173-303-902, a Citizen/Proponent meeting was held by Benton County officials in August 2004. Notification about the meeting appeared in several major newspapers in all of the "potentially affected" areas. The meeting was held to receive public concerns about the siting of the IDF. The officials did not receive any comments opposing the siting of the IDF. Based on the public comment they received, Benton County officials chose not to enter into negotiations, as is allowed by the applicable regulations.

As stated above, the draft IDF permit will allow the Permittees to dispose of three MLLW streams, each of which will arise from Hanford Site activities. The Waste Treatment Plant (WTP) will produce immobilized low activity waste by treating Hanford tank waste. The Demonstration Bulk Vitrification System (DVBS) will produce up to 50 boxes of immobilized waste. Operations of the IDF facility that generate MLLW or dangerous waste that does not require treatment prior to land disposal will produce very small quantities of waste. Currently, only those three waste streams will be disposed in the permitted portion of the IDF that will be regulated under the provisions of the dangerous waste permit. Other mixed waste streams cannot be disposed at the IDF until the Permittees submit a request for a permit modification with the supporting information described above. Ecology must modify the IDF permit; such modifications will only occur when Ecology has completed its review of all of the information that the Permittees must supply about risk and environmental impacts with the permit application.

Ecology did not address potential future waste streams that might be disposed in an expansion of the IDF because sufficient information is not available to evaluate the potential for significant adverse impacts to the environment and human health. Until such information is available and proves to be acceptable to Ecology, Ecology will not consider any expansion of the permitted portion of the IDF or any new waste streams. Ecology chose the most conservative choice in deciding to phase its environmental review to support permit modifications that the Permittees must request for any waste form not permitted by the draft IDF permit. To do otherwise would be to risk misjudging and perhaps under-estimating the breadth of significant adverse environmental impacts. Ecology will not perform forward-looking estimates of impacts, including those related to transportation and impacts on certain groups within the population of the State, when to do so would allow the Permittees to claim no impacts when that assertion lacks a scientific basis.

Ecology appreciates your concern about the issue of offsite waste being shipped to Hanford and the potential of that offsite waste to either negatively impact Hanford's risk burden or for the offsite waste to compete or out-compete Hanford waste for space within in IDF's allowable risk budget. In that light,, Ecology offers these commitments:

- The State is committed to preserving IDF's capacity for accepting Hanford's onsite cleanup-related waste without violating environmental thresholds.
- In making this permitting decision, the State examined a proposal to build IDF at 1/3 of the capacity (82,000 cubic meters for each cell for a total of 164,000 cubic meters) previously proposed by DOE on both the MLLW and LLW sides.
- Permit condition III.11.I.5.a.ii. requires the USDOE and Ecology to meet to discuss mitigation measures or modified waste acceptance criteria for specific waste forms if modeling indicates that waste disposal may bring the facility within 75% of an environmental threshold or performance standard.
- Such results will be information that may cause Ecology to re-examine this permitting decision pursuant to WAC 173-303-830(3) and threshold determination pursuant to WAC 197-11-340(3).
- Similarly, any Permittee request to modify the permit to expand or allow disposal of additional waste on the MLLW side, or any decision by DOE to expand or dispose of additional waste on the LLW side, will be information that may cause Ecology to re-examine this permitting decision pursuant to WAC 173-303-830(3) and threshold determination and mitigation obligations pursuant to WAC 197-11-340(3).
- If Ecology re-examines this permitting decision and threshold determination, Ecology may modify the permit to ensure that capacity at IDF is preserved for accepting Hanford's onsite cleanup-related waste without violating environmental thresholds.
- If USDOE wishes to expand the size of the landfill or add new waste streams in a manner that requires a permit modification or a new SEPA Threshold Determination, permit condition III.11.i.5.a requires USDOE to submit a new Risk Budget Tool. That risk budget tool will be subject to public comment with the new draft permit or the revised SEPA Threshold Determination.

1. Ecology is Required by State Law to Implement Negotiations on the Siting of this Landfill, and Can not Simply Ignore Our Concerns; Ecology Must Reject the Checklist and Application; and Should Sanction USDOE for False Statements or Omissions Contained Therein:

Ecology can not simply ignore our concerns over the siting of this massive landfill. RCW 70.105.260 requires that the Department consider incorporating into any permits or approvals the results of any agreement to mitigate impacts negotiated pursuant to facilitated negotiations conducted under the authority of that statute.[xxxiv] *Ecology has a duty to seek to*

convene such negotiations, and, well knows, that we have the capacity, public support and will to challenge the approval of the landfill. ….

Note: Ecology did not meet the duty under the statute to seek facilitated negotiations as asked by citizen groups, by asking only local governments if they wished to have negotiations on the landfill. We have explicitly asked for such negotiations and conditioned our withdrawal of the request for public hearings on Ecology hosting a facilitated negotiation, which should be based on the use of "principled negotiation", establishing what principles are sought to be protected by state policies and citizens.

Washington's Department of Ecology, by proposing to permit the IDF without any consideration of cumulative impacts and transportation impacts, has abandoned its duty to consider the impacts of this project on Northwest residents[xxxv], and abandoned its mandatory duty to protect our fundamental right to a healthful environment.

ECOLOGY RESPONSE: Comments noted. Ecology considered your comments concerning RCW 70.105.260. By the requirements of RCW 70.105.260(1)(b), Ecology must encourage and assist in conflict resolution between facility proponents, host communities and other persons. The statute does not require Ecology to seek facilitated negotiations but to assist in conflict resolution. Ecology recognizes that the commenter wished for the facilitated negotiations in lieu of a formal hearing. As explained above, based on the public comments that they received, Benton County officials chose not to conduct facilitated negotiations.

Because There Are Known Probable, Significant Impacts from the Project (IDF Landfill), Ecology Has a Duty to Disclose, Receive Comments on, and Consider Reasonable Alternatives for the Project:

The duty to consider reasonable alternatives to the proposed project – which Ecology acknowledges to have probable, significant impacts has not been met. The public is entitled to a description of such reasonable alternatives and consideration of them by Ecology. Such consideration would undoubtedly lead to reasonable mitigation measures and the required use of alternatives:

- *USDOE has available for disposal of LLW and MW a fully regulated, and environmentally preferable alternative through use of the Envirocare facility in Clive, Utah. This facility is available for USDOE to dispose of both onsite Hanford waste and offsite waste. Neither of these alternatives has been considered in the record for the HSWEIS and the WMPEIS. Nor is the availability of this alternative described in the notice to the public and SEPA checklist, which violates Ecology's own rules.*
    - *The Envirocare site is in a geologic area where there is no potential for contamination of potable groundwater (drinking water or other beneficial purpose). The geology and higher standards at Envirocare for waste acceptance, disposal and monitoring are described in Heart of America Northwest's "Cross-Site Comparison of USDOE Mixed Waste Disposal Site Options: A Review and Comparison of Mixed Low-Level Radioactive and Hazardous Waste Disposal Facilities" by John Brodeur, P.E., L.E.G.; June, 2005.*
    - *The Nevada Test Site (NTS) is also environmentally preferable to Hanford for disposal of LLW, and may be available to USDOE for Hanford wastes. Again, it sits in a geologic area, as described by John Brodeur, which precludes any likely contamination of groundwater (approximately 790 feet below with much higher evapotranspiration than at Hanford), and makes any use of groundwater extremely unlikely. The Mixed Waste landfill permit issued NTS by the State of Nevada bars use of the landfill for any offsite waste, a condition which Ecology should explicitly adopt for the IDF landfill.*

- *The conditions described in our report imposed on the Envirocare facility should be adopted for the IDF landfill (in its entirety, not just for the MW cell), including:*
  - *vadose zone monitoring lysimeters to detect contaminants that could migrate in vadose zone vapor;*
  - *vapor monitoring for the IDF landfill and cover (during operations as well as after capping);*
  - *quarterly (rather than biannually) groundwater samples and analysis for all constituents listed in the permit – expansion of the constituents to be monitored to include the wider suite of constituents which are projected to be migrating in any manner from existing Low-Level Burial Grounds, or found in descriptions of waste planned to be disposed;*
  - *vegetation monitoring;*
  - *vadose zone moisture monitoring;*
  - *groundwater wells spaced every 400 feet, (in contrast to the proposed permit for IDF with just four groundwater wells and a point of compliance several hundred feet from the unit);*
  - *state enforceable waste acceptance criteria with total source limits applicable to all units in the landfill;*
  - *a design timeframe for the MW units of 1,000 years of isolation and a groundwater protection timeframe of 10,000 years.*

- *USDOE has failed to meet its obligations under federal legislation to consider the long-term costs of disposing of waste in Hanford's IDF landfill in comparison to other available alternatives, which is legislation promoted by Heart of America Northwest. The use of the Hanford IDF landfill is, logically, greater than the cost of unlined disposal at Hanford. Yet, prior studies show that both short term and the life-cycle (long-term, fully burdened) disposal costs for Hanford actually exceed the costs for disposal of Class A LLW and MW at Envirocare.*

> *Low-level radioactive waste disposal costs.—The Energy and Water Development Appropriations Act, 2002, directed the Department to prepare analysis of life-cycle costs of disposing of low-level radioactive waste and mixed low-level radioactive waste (LLW/ MLLW). The conference committee was concerned with DOE's practices for disposal of LLW. These concerns centered on DOE's use of federal versus commercial disposal facilities and the life-cycle costs of each option. The House Committee on Appropriations noted that (1) DOE's was relying too heavily on its on-site and off-site disposal facilities, inhibiting development of a viable and competitive commercial disposal industry, and (2) commercial disposal facilities may offer DOE the lowest life-cycle cost for waste disposal. DOE responded with a July 2002 life-cycle cost report to Congress, which specified actions it would take to ensure that sites use life-cycle cost analyses, including justification for expansion or new construction of on-site disposal facilities. DOE issued guidance in July 2002 directing its field offices to use full ''cradle to grave'' life cycle costs and analysis of options in making LLW disposal decisions.*

U.S. House of Representatives Appropriations Committee Report on the FY'2006 Energy and Water Appropriations Act, at 177 and 178 (May, 2005).

USDOE has never considered the life-cycle costs of disposal of on-site or offsite LLW and MW in the IDF landfill in comparison to other available alternatives. Ecology can, and should, require such consideration of alternatives under its SEPA authority to ensure full and fair consideration of all alternatives to the IDF, including whether the cumulative impacts from wastes proposed to be disposed in the IDF can be reduced by use of available alternatives, and

whether the impact from the planned footprint of the IDF can be reduced by reducing its total capacity (including capacity of the initial East and West cells) through use of existing alternative disposal facilities.

ECOLOGY RESPONSE: When the Permittees first indicated that they wished to construct the IDF, they provided a Notice of Intent and information about how the proposed site would comply with the siting criteria in the State's Dangerous Waste regulations (see WAC 173-303-282). Benton County officials held a public meeting to receive public comments on the site.

During its review of information that culminated in the Mitigated Determination of Nonsignificance (MDNS), Ecology reviewed the impacts of construction and operations of the IDF. As explained above, Ecology conducted a phased review based on the information provided by the Permittee in their modified application, as well as other information that the Permittees had prepared that addressed the impacts of creating and disposing of the vitrified glass waste forms. The MDNS that Ecology prepared to document their environmental review underwent review with the draft permit for 45 days.

The IDF facility as permitted for disposal of three waste streams will incorporate vadose zone monitoring; therefore, imposition of the conditions listed above is not necessary.

The SEPA rules do not require Ecology to do a cost-benefit analysis, even for an EIS (see WAC 197-11-450). Please provide your question to the US Department of Energy.

Hanford Integrated Disposal Facility (IDF) Permit and SEPA Determination Review,
from

A Review and Comparison of Mixed Low-Level Radioactive and Hazardous Waste Disposal Facilities

by

John R. Brodeur, P.E., L.E.G.
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Report prepared for

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June, 2005

The following portion of the complete report is produced as part of Heart of America Northwest's comments on the IDF Permit and SEPA Determination, and should be responded to as part of our comments:

3.3 IDF Disposal Facility Summary

The USDOE's proposed Integrated Disposal Facility (IDF) is currently under construction in the 200 East Area at Hanford (see Figure 3.3). This facility is a combination of two identical disposal cells sitting side-by-side and referred to as the East Cell and the West Cell. Figure 3.3 provides the only site plot that could be found for the IDF because maps and schematics were redacted from the Ecology permit application (presumably due to USDOE request for security controls intended to mitigate terrorist threats to the facility). This inexplicable redaction of siting and design adds to the difficulty of getting information on this facility, and makes commenting on the permit and impacts more difficult.

- *Total capacity of initial East (LLW) and West (MW) Cells: 164,000 m3*
- *Total capacity planned for IDF when fully built: 900,000 m3*
- *Total amount of solid wastes disposed to date in Hanford's soil: 283,000 m3*[6]
- *Total on-site wastes estimated by USDOE as requiring disposal: 156,735 m3*[xxxvi]

Washington Ecology issued a proposed permit for construction and operation of the IDF landfill on May 6, 2005, along with a proposed "Determination of Non-Significance" (DNS) under the State Environmental Policy Act (SEPA).

[6] HSWEIS, USDOE, February 2004.

Washington State acknowledges that USDOE's Hanford Solid Waste Disposal EIS (HSWEIS)[7] is legally inadequate in regard to the cumulative impacts from the IDF landfill (offsite wastes and secondary wastes from vitrification of High-Level Wastes are key components of these cumulative impacts) and the Hanford Tank Waste Closure and Supplemental EIS has not been issued, which USDOE says will consider the impacts from disposal of secondary wastes in IDF. Because of the inadequacies alleged by Washington State, the state has sued the USDOE in federal court alleging that the HSWEIS is legally inadequate under the National Environmental Policy Act. The State, therefore, can not adopt the entire HSWEIS in support of the mixed waste permit sought for the facility, and the State has proposed conditions limiting the West cell of the IDF to onsite mixed wastes from a demonstration of bulk vitrification, Immobilized Low Activity Waste (despite the names, both of these waste types are highly radioactive wastes from Hanford's High-Level Nuclear Waste tanks, but they do not include the hottest wastes from those tanks), and leachate collected from the IDF itself. No limits are proposed to be placed on the wastes to be accepted in the East cell, which is for LLW. The draft permit foresees allowing additional types of waste to be disposed in the mixed waste portion of the landfill based upon future analyses of whether the additional waste streams will violate any standard (focusing on groundwater standards, rather than the health based standards of the Model Toxics Control Act).

The draft permit also foresees additional cells being added until the entire capacity increases from 164,000 cubic meters for the initial East and West cells to a total capacity of 900,000 cubic meters.

The initial East Cell of the IDF will be used for disposal of 82,000 cubic meters of low level radioactive waste from both on-site and offsite, but no mixed waste. This new low level waste disposal facility will be used in place of DOE's current low level waste burial grounds in the 200 East and 200 West Areas which are unlined soil trenches of up to 1,500 feet in length.

The new IDF facility will represent a significant improvement in DOE's low-level waste facility operations compared to use of Hanford's massive unlined soil trenches, which Heart of America Northwest has fought to end use of for over 15 years. Washington's voters enacted the Cleanup Priority Act (Initiative 297) with the largest vote total in state history for a ballot initiative, which barred continued use of unlined trenches for disposal of wastes at facilities where such unlined landfills were releasing contamination and had received mixed wastes.[8] In June, 2004, faced with passage of I-297, USDOE adopted a Record of Decision to end dumping waste directly into the soil in unlined trenches and to construct the Integrated Disposal Facility, as proposed in the HSWEIS. For Low-Level Waste, USDOE is basically going from use of unlined, uncontrolled burial grounds to a lined and monitored disposal facility. For Mixed Waste, IDF represents a massive expansion of capacity for regulated mixed waste disposal at Hanford.

Many of the details on the design, construction, quality assurance, risk assessment and proposed operations are not available for the East Cell facility. They are not covered under the RCRA mixed waste permit which covers only the West Cell of the IDF. This is because the State does not regulate radioactive waste disposal facilities. In this case, the DOE is self-regulated and as a result, there is little documentation available for review.

Washington Ecology could require disclosure and consideration of this information in order to assess the cumulative impacts of the IDF under SEPA, and to mitigate impacts or set permit conditions. However, Ecology has chosen not to do so.

ECOLOGY RESPONSE: On May 6, 2005, the Washington Department of Ecology (Ecology) issued a draft permit for construction and operation of one of two "cells" in the Integrated Disposal Facility (IDF). The cell for which Ecology issued the draft permit will currently receive only three mixed low level waste (MLLW) streams. Those streams will be: 1) vitrified low-activity waste (LAW) that the US Department of Energy (USDOE) and its contractors (the Permittees) will generate in the Hanford Waste Treatment Plant (WTP), 2) up to 50 boxes of bulk vitrified waste that will result from the operation of the Demonstration Bulk Vitrification System (DBVS) operation in the 200 East Area, and 3) a very small quantity of secondary waste that will result from the operation of the IDF.

The draft IDF permit allows the Permittees to construct and operate a cell of 82,000 m^3 total capacity. Any expansion of this capacity would require a permit modification request and additional SEPA analysis. In Condition III.11.I.2, Ecology stipulated that only certain ILAW forms were acceptable for disposal in the IDF: 1) approved glass canisters that were generated in accordance with the terms, conditions, and requirements of the WTP, and 2) 50 test boxes that are specified in DBVS test plans. In Condition III.11.I.7, Ecology also stipulated that small volumes of waste that might be generated during operations could be disposed in IDF if they do not require treatment to meet land disposal restrictions before disposal. Condition III.11.I states that no other waste forms may be disposed in IDF unless the Permittees submit a permit modification, with an analysis that will prove to be adequate to achieve State Environmental Policy Act (SEPA) compliance, a risk assessment and ground water model showing the environmental impact. Ecology must approve the permit modification.

As part of the effort to conduct its environmental review of the draft permit, Ecology reviewed several sources of information. Ecology referenced a risk assessment that evaluated forms of waste that could result from supplemental treatment, the *Tank Waste Remediation Environmental Impact Statement* (TWRS EIS) that discussed the long-term storage of ILAW in the 200 East Area, and the Performance Assessment that evaluated disposal of WTP ILAW at the IDF location. Based on those evaluations, Ecology determined that the construction and operation of the MLLW cell to receive the three waste streams did not present a significant hazard to human health or the environment.

Because of the restricted scope of Ecology's permitting with respect to the MLLW cell, and a settlement reached in the Washington v. Bodman lawsuit that affects both the MLLW and LLW cells, offsite waste disposal analyzed in the HSW EIS will require a new NEPA and SEPA analysis and review before disposal of such waste can occur to either the MLLW or LLW cells of IDF and before the dangerous waste permit could be modified to accept off-site waste in the MLLW cell.

With respect to the commenter's assertion that Ecology could request documents referenced in the permit be made available for review under SEPA, there is no regulatory basis for such a request. There is a requirement for **environmental documents** to be available to the public, per WAC 1970-11-504. Item (1) requires that SEPA documents required by the rules be retained by the lead agency (here, Ecology) and be made available per RCW 42.17. Ecology must make copies of the environmental document, charging only for the costs for copies plus mailing. An environmental document is any written public document prepared under WAC 197-11, which includes environmental checklists, determinations of significance, notices of intent, environmental impact statements, determinations of nonsignificance, and mitigated determinations of nonsignificance (see WAC 197-11-744). Further, the terms environmental analysis, environmental report, and environmental assessment do **not** have specialized meanings in WAC 197-11 and do not refer to particular environmental documents. Design, construction specifications, and quality assurance documents supporting the draft permit are not environmental documents; hence, SEPA does not require that they be made available to the public.

Rather, Ecology has sued USDOE in federal court alleging that the HSWEIS (prepared by USDOE under NEPA) is inadequate for failure to disclose such cumulative impacts. Under its SEPA authority, Heart of America Northwest believes that Ecology could set total waste acceptance limits to ensure that the total quantities of waste do not exceed the allowable "risk budget" for the entire facility, and limit offsite low-level wastes to that portion of the risk budget which is not forecast to be necessary for on-site cleanup wastes.

ECOLOGY RESPONSE: As Ecology responded above, the Permittees must request a permit modification to bring in any new MLLW form. That permit modification request must include an analysis sufficient for Ecology to make a threshold determination on major adverse impacts, a risk assessment and groundwater modeling that shows environmental impacts. Ecology will review the information as part of the permit application and will grant or deny the permit modification, based in part, on that review.

The design, construction, operation and closure of the East Cell are reported to be the same as that of the permitted and regulated RCRA West Cell. It is assumed that the East Cell will be operated in a manner consistent with either the West Cell of the IDF or the ERDF relative to waste placement, fill material compaction, environmental monitoring and the rest. However, with no information, all of this remains to be verified.

Only a small temporary soil berm will separate the unregulated East cell from the regulated MW West cell. As the name states, the landfill is "integrated", and it is necessary to examine operations, waste acceptance, monitoring, etc… for both sides to assess cumulative impacts. However, there is nothing integrated about the regulatory approach, consideration of impacts and disclosure for the two sides of the IDF.

Examples of what is not disclosed about the East Cell of the facility (due to the inadequacy of the EIS and the failure to describe operations and conditions in the permit application) are:

- *whether or not USDOE will continue the practice of random dumping of the waste materials as they have done at most of the low level burial grounds; and,*
- *waste acceptance criteria and quality assurance associated with the disposal operations.*

Without any description or limitations on disposal operations, waste acceptance criteria, etc… it is impossible to assess the cumulative impacts of the "integrated disposal facility."

ECOLOGY RESPONSE: Ecology received a modification to the Part B application that requested a permit to dispose of three MLLW streams, two of which will be immobilized LAW from the WTP and DBVS, as well as a small quantity of MLLW that will result from routine operations at the IDF. The third waste stream will be composed of wastes that do not require treatment before disposal. Ecology chose to issue a draft permit for the IDF that limited the disposal to those waste forms and the size of the single MLLW cell in the IDF. Not having the information about any other waste streams that Ecology deems would be necessary to permit for disposal, Ecology chose to make addition of any other wastes subject to preparation of a permit modification, a risk assessment and groundwater modeling. For Ecology to complete one SEPA determination for all possible future waste streams would be premature and potentially could end with an insufficient analysis of the environmental impacts.

Even if plans were described, the lack of controls via permit has allowed USDOE to "waive" waste acceptance criteria in the past for Hanford's Low-Level Burial Grounds (LLBGs); e.g., for highly radioactive Remote-Handled LLW, or even for suspect MW. This practice is likely to continue. Thus, IDF is like a water balloon with controls over half the balloon (the West, or MW

side) and none over the remainder. It is likely that the balloon (the total risk budget for the landfill in comparison to standards) will still burst from the pressure of what is added to the East side.

The West Cell of the IDF is to be a RCRA regulated and permitted mixed waste disposal facility. A RCRA permit application for the West Cell only, was prepared by the DOE (DOE, 2005) and a Draft RCRA permit was prepared by the WA Dept. of Ecology and is currently under public review.

ECOLOGY RESPONSE: Ecology established requirements in the draft IDF permit that require the Permittees to submit a permit modification prior to the addition of a new waste stream. With the waste stream is a requirement for analyses sufficient to allow a SEPA determination, a risk assessment and groundwater modeling of environmental impacts. Ecology will review the information in the permit modification and other documents required to ensure that addition of wastes will not lead to degradation of the State's resources, including the groundwater under the Hanford Site.

The permitting of IDF is proposed to be phased, with the initial phase of the permit limiting use of the West Cell to dispose of Immobilized Low-Activity Waste (ILAW), bulk vitrification waste, and miscellaneous mixed waste originating from IDF operations. ILAW and bulk vitrification wastes are wastes that are retrieved from High-Level Nuclear Waste tanks and glassified (vitrified) using two different approaches.

Immobilized Low-Activity Waste (ILAW) is vitrified material that will originate from the low activity waste[9] vitrification process also being built at Hanford. This process takes high level waste from the tanks, segregates out some of radionuclides into a lower-activity fraction and vitrifies this material into a stable waste form. This waste form will likely be a glass cull material or a fractured monolithic glass inside of a sealed stainless steel cylindrical container measuring 4 ft in diameter and about 7 ft tall.

Bulk vitrification waste will be lower-activity material retrieved from the High-Level Waste tanks that is melted in large containers and left in bulk glass form. This bulk glass will be allowed to cool and then disposed of, container and all, in the West Cell mixed waste IDF landfill.

The West Cell RCRA permit currently does not include allowance for disposal of any off-site waste. That issue is the subject of two cases currently being argued in the courts.[10] If off-site mixed waste is brought in to Hanford and buried at the IDF, a RCRA permit modification will be required.

The rationale for phasing of the permit is the lack of adequate cumulative impact analysis for IDF, and Washington's disagreement with USDOE over the mobility and risk from Iodine 129 and Technetium 99 in secondary wastes generated from vitrification. In a nutshell, Washington has challenged the HSWEIS (which was the basis for USDOE's Record of Decision to proceed with the IDF landfill) for failure to disclose and assess impacts if 95% of the Iodine 129 is disposed of in the IDF landfill, rather than being vitrified with the High-Activity Wastes retrieved from the tanks.

The West Cell RCRA permit also does not include any on-site generated mixed waste. Hanford generated mixed waste currently goes to two smaller RCRA permitted mixed waste disposal facilities in the 200 West Area. Those smaller facilities are presently being used for disposal of on-site generated waste including mixed waste and low-level waste and they are filling fast. A

permit modification will be required in the future if there is a need to dispose of any additional on-site generated mixed waste at the West Cell of the IDF.

The Draft RCRA permit (Ecology 2005) has adopted the existing NEPA documentation of environmental impacts that were prepared for the separate disposal facilities as being adequate and appropriate for the purposes of the integrated facility (IDF). They issued a determination of non-significance relative to the integrated approach.

With this determination, much of the information such as the performance assessment for the previous ILAW facility, becomes relevant to the IDF. Not all these documents could be reviewed in this study due to lack of availability.

ECOLOGY RESPONSE: Ecology used the Performance Assessment for the IDF published in 2001 as the bases for the SEPA threshold determination that resulted in the MDNS published with the draft permit. Ecology also used the *Tank Waste Remediation System EIS* to evaluate the impacts of disposing of the ILAW. In the *TWRS EIS*, modeling ILAW for long term storage led to model results that could be anticipated if the waste were buried. The need to evaluate a location for disposal other than the Grout Vaults to the east of the 200 East Tank Farms modeled in the TWRS EIS and a vitrified glass form to be created from ex-situ vitrification outside of the WTP necessitated careful reviews of other documents, including the 2001 Performance Assessment for the IDF and the Risk Assessment that supported the selection of supplemental treatment. The MDNS resulted from a deliberate effort to ensure that all environmental impacts requiring mitigation were clearly identified and mitigated where possible.

IDF Details

Information on the IDF design comes from the RCRA permit application (DOE 2003) and from the Draft RCRA permit (Ecology 2005) which is currently under public review.[11] The IDF risk assessment is provided in Mann (et al, 2004).

There is not a lot of documentation on the design, construction specifications or quality assurance for the IDF.

There are no engineering justification reports or design configuration report similar to that of Envirocare (2001b). Part of the reason for this is that much of this documentation was prepared for the previously separate disposal facilities that were integrated in the creation of the IDF. Documentation of technical requirements and system specifications and the performance assessment for ILAW waste, for instance, are referenced in the Draft RCRA permit because they are applicable to the IDF. A conceptual design report for the ILAW waste (RPP-7908) is referenced in the IDF permit but was not available for review (in violation of SEPA and other applicable standards)

To make it more difficult for the public to review and comment on the IDF landfill, the full Draft RCRA permit and the permit application can only be reviewed in the libraries, presumably for security reasons.

The following is a short summary of what little we know about the IDF following review of the Draft RCRA permit.

The IDF design requirements come from RCRA and are codified in WAC codes as Washington Dept. of Ecology has delegated RCRA authority[12] and permitting responsibility. These design requirements are quite prescriptive for mixed waste landfills[13].

The IDF is to be 900,000 cubic meters total volume (31,77 million cubic feet, or 1.2 million cubic yards). It will be constructed as a moving waste disposal pit similar to the ERDF, with the initial pit in the north portion and a service ramp toward the south. This allows filling of the North portions first with expansion toward the south to eventually cover the entire footprint area shown in Figure 3.3.

The liner, leachate collection and removal system and leak detection system are "critical systems" in the IDF and apparently subject to appropriate quality assurance requirements.

The IDF will have two leachate collection and removal systems (LCRS). The upper or first LCRS is located in a gravel layer that is just beneath an operations layer. The secondary system is called a leak detection system because it is located beneath the multi-layered liner system. This design of a dual leachate collection allows differentiation of operations derived leachate from leachate that would indicate a failed liner system. The permit indicates the secondary leak detection system was added to comply with the Atomic Energy Act of 1954. Which specific requirement is not known.

The liner will be the equivalent of a double liner system that is compliant with RCRA Subtitle C 40 CFR264 and WAC 173-303-665. This liner system is designed for use during the active life of the landfill where the active life includes the periods of operations, closure and post closure (30 yrs).

The liner is composed of the following layers listed from top down from the waste materials:

- *Operations layer – 3ft of operations soil for freeze protection and to protect the liners from damage during operations*
- *LCRS - 1.0 ft layer of gravel with a non-woven separation fabric above. Leachate collection pipes are located in the gravel and site is graded to allow leachate collection.*
- *Primary geomembrane – HDPE 0.6 mm thickness*
- *Primary GCL – Geosynthetic clay liner material consisting of a synthetic mat with bentonite clay*
- *Secondary geomembrane liner - HDPE 0.6 mm thickness*
- *Secondary GCL – Geosynthetic clay liner*
- *Admix layer – 3.0 ft of soil and bentonite mixture*
- *Secondary Leak Detection system – Composed of soil, gravel, drainage net and tertiary geomembrane*

Waste placement will be controlled and monitored with a specific plan. Bulk vitrified mixed waste will be disposed in the containers in which the melt is formed. Vitrified low activity waste will be packed in the waste zone, four layers high. All void spaces between packages are to be filled but details of specific procedures or requirements and verification methods are not included in the permit.

The IDF cover will be designed to comply with WAC regulations. Waste materials will be covered with an interim cover or a final cover during the pre-closure period. Details of the cover design will be provided before closure.

The risk assessment (Mann et al., 2003) reports that the cover will have an inverted shallow V shape with the apex of the V running along the center of the cell and parallel to the longest dimension (N-S). It will have a 2% slope to shed water and it will extent 30 ft beyond the inside

edge of the trench liner system. The cover will be designed for a 500 year life and it will have an impervious asphaltic concrete cap. No additional information on the cover design is available at this time.

Other documents referenced in the permit include the ILAW project definition criteria (RPP-7303), A conceptual design report for ILAW (RPP-7908) and the IDF Phase 1 critical systems design report (RPP-18486). These were not available for review in time for this report.

A risk assessment for the IDF was prepared to satisfy DOE requirements (DOE Order 435.1). This risk assessment is a modification of a performance assessment that was prepared for ILAW and reconfigured to the waste form, site specific conditions and the geometry of the IDF.

The most significant performance objectives that the IDF must measure (DOE Order) include:

- *All pathways maximum dose of 25 mrem effective dose equivalent (EDE) in one year.*
- *Maximum drinking water dose for beta-gamma emitting radionuclides of 4 mrem/yr EDE.*
- *Measure of incremental lifetime cancer risk due to chemicals*
- *Inadvertent intruder all-pathways chronic does objectives of 100 mrem/yr EDE*

The model was set up with a series of separate models for the near field, the far field and groundwater.

The near field extends from the surface to the bottom of the engineered structure and includes the actual landfill region composed of the waste material zone and surrounding soil material. The liners, leachate collection systems and cover are not considered in the model with the intention of not taking credit for any isolation they provide. The near field considers different release mechanisms for the different waste forms expected in the IDF. The recharge model through the top soil surface uses a 4.2mm/yr (0.17 inches) per year moisture flux value, assuming most of the precipitation is evaporated or transpired out the surface.

The far field is the region beneath the bottom of the facility to the groundwater and includes the vadose zone sediment. This region is modeled with a finite element program called VAM3DF which uses a sorption equation to assess the effect of geochemical retardation. This model uses a homogeneous, 2-layer earth system shown in Figure 4.2.

The groundwater region was modeled using a previously developed groundwater model that was scaled to fit the geometry and layout of the IDF. The groundwater uptake well for risk calculations is located 300 ft from the down gradient edge of the IDF. No additional information on the groundwater portion of the model is provided in the IDF risk assessment.

An inadvertent intruder scenario is considered in the risk assessment. It is configured basically the same as the intrusion scenario for the ERDF where the intrusion is assumed to be one of drilling a groundwater well and bringing contamination up to the surface in the drill cuttings. An intrusion scenario associated with excavating for a basement and causing the direct intrusion into the waste material is not considered a credible scenario in this assessment because the waste is more than 15 ft below ground surface.

> *This is a highly questionable assumption for the important exposure scenario for failure of institutional controls, given the experience at other Superfund sites in Washington state and the designation of the future use of the area of the IDF as industrial. In similar industrial settings, construction is far more likely to result in excavation below the 15 foot level. Other likely institutional control failures which should be considered include the installation of water lines and utilities following loss of "configuration control" (i.e., loss of as built blue prints). Installation and excavation of utility lines is likely to result in excavation of waste material which would then be used as fill in another application, and*

creation of new source of infiltrating water and liquid, and new preferential migration paths – defeating the engineered barrier cap. Thus, adding underground water or sewer lines for industrial uses even alongside the capped area would create the potential for significant increases in liquid infiltration and contaminant migration.

ECOLOGY RESPONSE: The risk assessment that the commenter discussed assumes that intruder scenarios are those that are evaluated in the 2001 performance assessment for the ILAW waste form performance assessment. The homesteader scenario is credible for an area that is largely devoted to agricultural activities. Unlike the more densely populated areas of the State of Washington, in the portion of the State east of the Cascade Range, the population growth and development is not increasing as quickly. A scenario that assumes urban and suburban development with installation of water lines and utilities ignores the development in the area around the Hanford Site. Ecology deems the scenarios presented in the risk assessment to be credible for the Site.

The results of the risk assessment show that for all pathways exposure is considerably lower than the performance objectives identified above. Groundwater impacts from the three waste types in the IDF produce different temporal shapes, time of maximum, and maximum magnitudes in the total exposure plot. Tc-99, I-129 and Np-237 are the primary contributors to dose at 1000, 2400 and 10,000 years. The key sensitive parameters and highest risk driver comes from the inventory of Tc-99 in the waste.

No information is provided in the risk assessment on the comprehensive or combined effects from both the East Cell and West Cell of the IDF as an inclusive risk assessment has not been completed. The lack of such a cumulative impact assessment means that any controls placed on the West Cells are likely to be defeated by the more permissive waste acceptance and operational practices applied by USDOE to the East Cells – with no analysis having been done in advance to determine what the maximum allowable source for potential contaminants should be.

Of course, the use of the East Cell for disposal of Hanford low level waste represents a great improvement in terms of engineered waste isolation and disposal facilities from the current operation of the unlined trenches. Because a combined risk assessment of both cells will undoubtedly not consider the liner in the performance calculations[14], a comprehensive risk assessment will not show a significant risk benefit to the new low-level waste facility as compared to the old unlined burial grounds.

ECOLOGY RESPONSE: Ecology agrees that a cumulative risk assessment for the IDF is required. Ecology does not intend that the disposal of LLW in one cell and MLLW in the permitted cell will result in the degradation of the State's resources or lead to significant adverse impacts to human health and the environment. Ecology required the Permittees to provide a permit modification and other information before any waste other than the three waste forms already permitted may be added.

Ultimately, it is the geology of the disposal site and total wastes disposed which determines the long-term groundwater and cumulative impacts of any disposal site. Thus, it is vital for any decision to consider reasonably available alternatives in a different geologic setting – since the geology is the ultimate arbiter of impacts from disposal facilities. For the IDF plan, this is more important given the massive volumes proposed to be disposed, the unknowns regarding the Iodine and Tc99 from secondary vitrification wastes and the total lack of disclosure of the waste forms and source terms proposed to be disposed from offsite wastes in the East Cell.

USDOE must disclose all aspects of its design, operations, waste inventory, and quality assurance for the East (LLW) Cells of IDF in order for anyone to have an assurance that the cumulative impacts of the facility will not exceed standards. Ecology has the ability to order this as a permit condition and for purposes of meeting its obligation to ensure that cumulative impacts are disclosed and considered in its SEPA determination. Ecology must now use this authority.

ECOLOGY RESPONSE: Ecology intends to review any additions to the IDF to ensure that they do not affect the State's resources adversely.

Additional Specific Comments on the Proposed Permit for IDF and the SEPA Checklist and Determination:

1. *The draft permit is wrongly limited to the West Cells, instead of covering the entire "integrated" facility. The SEPA Checklist improperly covers only the East half of the landfill.*
    a. *There is no legal, engineering or scientific basis for separating the cells in terms of overall permit conditions and waste acceptance conditions.*
    b. *The cumulative impacts from the entire facility must be considered, and permit conditions established which prevent the entire facility from exceeding the relevant standards – which include the total carcinogen risk standards from MTCA for releases reasonably foreseen through risk assessments. SEE RCW 70.105E.060.*
    c. *Without any description or limitations on disposal operations, waste acceptance criteria, etc… it is impossible to assess the cumulative impacts of the "integrated disposal facility."*
    d. *Even if plans were described, the lack of controls via permit has allowed USDOE to "waive" waste acceptance criteria in the past for Hanford's Low-Level Burial Grounds (LLBGs); e.g., for highly radioactive Remote-Handled LLW, or even for suspect MW. This practice is likely to continue.*
    e. *Thus, IDF is like a water balloon with controls over half the balloon (the West, or MW side) and none over the remainder. It is likely that the balloon (the total risk budget for the landfill in comparison to standards) will still burst from the pressure of what is added to the East side.*
    f. *All conditions – such as waste acceptance criteria, operational records, operational placement, total constituent limits – must apply to the entire facility.*

ECOLOGY RESPONSE: The Washington Department of Ecology issued a draft permit to govern the operation of the mixed low level waste portion of the IDF. The IDF was designed and is constructed with separate leachate collection systems for both the mixed waste and low level waste cells. The cells are separate hydraulic units.

As stated above, the dangerous waste permit allows disposal of only three mixed waste streams (immobilized low activity waste from the Waste Treatment Plant, limited volumes of bulk vitrified waste from the Demonstration Bulk Vitrification System, and very small quantities of mixed waste that the IDF operations will generate that do not require treatment before disposal.

The draft permit requires the Permittees to develop waste acceptance criteria for the three waste streams. The criteria for the MLLW portion of the IDF will be made available for public review as part of a Class 3 permit modification.

2. *The permit fails to require cover before the entire unit has a final cap. See II.11.c.1.b.*
    a. *The failure to have interim cover will result in additional infiltration and accumulation of water mobilizing constituents and of leachate.*

b. *During snow melt and unusual conditions, extremely large quantities of water may be added, which is not part of the modeling.*

ECOLOGY RESPONSE: The IDF leachate collection and removal system (LCRS) design basis assumed that each cell would remain uncovered (except for the dirt operations layer) through the duration of facility operations. In addition, the design of the LCRS assumes a 25-year storm event will occur, including conditions considered worst case (e.g., snow melt).

3. *The permit fails to specify adequate groundwater sampling for all hazardous constituents which are likely to be disposed, and which have been released and spread from pas burial operations at Hanford. These same constituents are likely to be disposed in IDF.*
    a. *Requirements under Washingtons' HWMA for description of waste types and sources is inadequate. While the West side is currently limited to three sources, it is known that USDOE will seek to dispose of a great range of MW and LLW, including wastes exhumed from Hanford TSD units. This requires an extensive description and requirement for vadose zone, leachate and groundwater monitoring for these constituents.*

ECOLOGY RESPONSE: The permit requires the Permittees to conduct groundwater sampling (see Chapter 5 of the draft permit). The groundwater sampling plan conforms to requirements in WAC 173-303-665 Landfills and WAC 173-303-645 Releases from Regulated Units. Should the Permittees submit a permit modification for added waste streams, the groundwater sampling plan will be subject to Ecology review and approval.

b. *Leachate is proposed to be sampled quarterly, rather than monthly. This is inadequate for early detection, especially if covers are not required. III.11.F.1.9.*

ECOLOGY RESPONSE: The Washington Dangerous Waste regulations require the Permittees only to sample leachate for purposes of onsite accumulation. If Ecology determines that the leachate contains dangerous waste, then Ecology will consider revisions to the sampling schedule.

c. *Leachate from East cells must also be managed as Mixed Waste. Leachate from these cells, with radionuclides, are hazardous constituents when released, and are subject to the RCRA MW permit.*

ECOLOGY RESPONSE: The two cells of the IDF have separate leachate collection systems. Ecology issued a draft permit for the mixed waste portion of the IDF; however, the Permittees will also operate the non-regulated portion of the facility. Ecology will regulate the dangerous waste portion of the facility.

4. *The permit totally fails to require any quality assurance, waste analysis or acceptance criteria for the East Cell. USDOE has a history of waiving its own criteria – which would destroy the basis for all risk assessments (if they were disclosed and reliable). The SEPA checklist fails to describe waste acceptance criteria and sources for the East Cell, preventing analysis of cumulative impacts and violating SEPA.*
5. *Use of 40 hectares of mature sage-steppe habitat is, in and of itself, a significant impact on a threatened habitat.*
    a. *Because there are reasonably available alternatives for disposal of both LLW and MW, Ecology must require either a full EIS with such analysis of alternatives, or mitigate the impact on habitat by limiting the total size of the IDF landfill to the size necessary to handle forecast Hanford Clean-Up wastes (156,000 m3), which is one sixth the proposed total size of the IDF landfill.*

b. *The SEPA Checklist fails to identify cultural and treaty significance of the site, and the mature sage-steppe habitat.*

6. *The SEPA checklist fails to disclose any of the true transportation impacts from transporting waste to the IDF facility. It falsely discloses the total transportation impact as 85 trips per day, which is for personal transportation and ignored the tens of thousands of shipments of offsite LLW and MW proposed by USDOE in its formally adopted plan and Record of Decision. This is a knowingly false checklist and should be withdrawn. The transportation impacts alone require a full EIS. USDOE has acknowledged significant probable impacts to human health from transporting the full amount of waste to IDF which it proposed in the HSWEIS (USDOE admitted 9 fatal cancers).*

ECOLOGY'S RESPONSE: Ecology revised the SEPA checklist to allow evaluation of the IDF that the modified permit application requested. This permit governs disposal of three waste forms: (1) immobilized low activity waste made in the Waste Treatment Plant, (2) immobilized low activity waste made in the Demonstration Bulk Vitrification System (DBVS), and (3) very limited amounts of mixed low level waste (MLLW) that result from the operation of the IDF and that will require no treatment before disposal.

Ecology chose to use a phased approach to evaluate the impacts to the environment and human health that would result from addition of the three waste streams to the IDF. As explained above, Ecology cannot evaluate the impacts of future waste streams without more information about them. Ecology made the addition of any other waste stream conditional upon the receipt of a Permittee initiated modification to be accompanied by an analyses sufficient for Ecology to perform a SEPA analysis, a risk assessment, and groundwater modeling of the impacts of to environment. As also stated above, for Ecology to estimate the impacts that might result from any other waste stream, while lacking adequate information, would in itself result in a risk that the impacts are under-estimated and the State's resources are adversely affected.

As was also explained above, the State is requiring the Permittee to provide information about the combined risk for any dangerous wastes that the Permittee requests be added.

The Mitigation Action Plan described mitigation measures that the Permittees will take to compensate for the loss of the shrub steppe habitat on another portion of the Hanford Site. Ecology reviewed the Plan to ensure the mitigation measures would replace the habitat.

7. *SEPA checklist fails to address MTCA as the basis for risk assessment and the policy of Washington State to not create new cleanups by allowing disposal of wastes in a landfill in such quantities and conditions such that MTCA standards are forecast to potentially be exceeded.*

ECOLOGY'S RESPONSE: As was appropriate for the threshold review, Ecology chose to evaluate the risk using information present in the *Tank Waste Remediation System EIS*, a performance assessment that evaluated immobilized low activity waste generated by the Waste Treatment Plant, and a risk assessment that looked at Bulk Vitrification system waste.

MTCA and SEPA integration must occur for a MTCA remedial action; however, construction of the IDF is not such an action.

The Hanford Site is a Federal site owned by the Department of Energy. At the Hanford Site, MTCA may be an applicable or relevant and appropriate standard for cleanup under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). For closures under the Dangerous Waste Regulations, MTCA Method B cleanup levels may be

calculated for soil, groundwater, surface water where closure requirements call for removal or decontamination of dangerous wastes or waste residues (see WAC 173-303-610(2)(b)(i)).

8. *The Checklist falsely says that air releases would not exceed levels immediately dangerous outside of "immediate area" because of the small quantity of material available for release. Other documents and past incidents show that there is a significant potential for airborne releases (i.e. from fires, accidents (e.g., dropping and failure of a High Integrity Cask with RH-LLW or RH-MW), volatiles, etc..) for wastes staged or disposed in IDF. An analysis to what degree the releases significantly impact health is required, not just whether offsite standards are violated.*

ECOLOGY'S RESPONSE: The SEPA checklist addressed the potential environmental releases that might occur from the immobilized low activity waste forms. The waste form is not one that will lead to significant releases from fires and dropping (glass monolith). Ecology does not view dispersible material releases as reasonable for the ILAW waste forms.

9. *The SEPA checklist must be withdrawn due to failure to disclose the entire project proposed by the applicant. The SEPA checklist fails to disclose offsite LLW planned for disposal in IDF – totaling over 7 million cubic feet. SEPA requires disclosure of all related projects and plans.*

ECOLOGY'S RESPONSE: Ecology reviewed and revised the SEPA checklist to reflect the three waste forms to be disposed in the IDF. As part of its threshold determination, Ecology reviewed the impacts that would result from placement of vitrified waste in the permitted (western) cell. Ecology made its determination considering the waste considering the IDF as a disposal facility for permitted and other wastes.

The SEPA checklist does not address potential disposal of low level wastes because the information necessary for an evaluation is not available. As was stated above, if the Permittees wish to add another waste stream, they must request a permit modification and provide the information required for Ecology to evaluate the impact on the environment and human health. For Ecology to attempt to evaluate the impacts of additional waste streams absent that information is not necessary to allow the disposal of the waste streams granted by the permit.

To: Mike Wilson, WA Dept. of Ecology
FR: Gerry Pollet, Heart of America Northwest
Date: 10-21-04
Re: Authorization for Excavation of Integrated Disposal Facility Landfill and Determination of Non-Significance (DNS)

Mike, I know that you were as surprised as we were, and taken aback, regarding the lack of notice about the IDF landfill. Thank you for taking our concern seriously and promising immediate attention. Following up from yesterday's conversation, there are several further serious grounds for withdrawal of the DNS and reissuing only after public comment ***with mitigation that would limit the authorization to onsite waste (for both halves of the landfill – which can not be artificially separated)****:*

1. *USDOE's notice (emailed 8-18) gives grounds for withdrawal of the DNS and authorization unless mitigated (pursuant to SEPA) to limit the use of the landfill to onsite wastes.*

   The notice gave NO indication to the public that this facility would be used for offsite waste. USDOE is to blame for issuing a notice which stated the facility was solely intended for Hanford Clean-Up wastes. USDOE and Ecology had knowledge that the significant public concern would be over impacts from adding offsite waste on top of the unknown impacts from onsite waste. USDOE knew that Washington State had already found that its Hanford Solid Waste EIS was inadequate in this regard. Thus, there is no excuse for USDOE to have issued a notice that failed to disclose that it intended the landfill to be utilized – pursuant to a formal USDOE Record of Decision – for offsite wastes. Of course, proper notice would have drawn significant public comment.

   Since USDOE's notice was limited to authorization for a landfill for onsite waste related to Hanford Clean-Up Agreement actions, Ecology should withdraw the DNS and authorization and reissue them limited solely to onsite waste pursuant to the notice issued by USDOE.

   The following is the full text of the substance of USDOE's notice, which is limited to notice that USDOE was seeking authorization for a landfill ***solely*** *serving Hanford Clean-Up actions:*

   > *"The construction of the IDF is on an aggressive schedule. The Temporary Authorization allows DOE-ORP to initiate construction activities at the IDF thereby maintaining its schedule for cleanup and closure of the Hanford Site as required by the Hanford Federal Facility Agreement and Consent Order, also known at the Tri-Party Agreement (TPA). This schedule is dependent on having a disposal pathway that is permitted to receive low-level waste and mixed low-level waste that will result from cleanup and closure activities."*

ECOLOGY RESPONSE: Ecology issued a draft permit and MDNS that allows the Permittees to dispose of three waste streams that will be generated on the Hanford Site: 1) ILAW from the WTP, 2) vitrified waste from the DBVS, and 3) small amounts of MLLW that may generated at the IDF, provided the waste does not require treatment before disposal. Any other wastes that the Permittees intend to add to the IDF may not be added until they submit a request for a permit modification and provide an analysis that can be used in a SEPA determination, a risk assessment, and groundwater modeling that shows the environmental impact of disposal.

Ecology did not withdraw the DNS, which was framed to address the rough excavation of the IDF that the TA allowed. Nothing in the rough excavation activities for a portion of the IDF

showed a significant adverse environmental impact. Excavation of the IDF was coupled with preservation of the soil removed, implementation of a mitigation action plan to find a site suitable for replacement of the shrub-steppe vegetation, and characterization of the excavation, including identification of geologic strata. The SEPA evaluation was phased to address the part of the activity for which information was available, a practice that Ecology has followed in granting the TA to install the admix test bed and groundwater monitoring wells and to issue a draft permit for disposal of three MLLW waste streams that will be generated at Hanford.

2. *We commented on the USDOE's SEPA checklist for the IDF landfill, back in December, 2003, and noted that it was seriously and legally deficient. Our comments were NEVER responded to. At the time, there was no final EIS. Since then, the State has found the final EIS to be legally inadequate. The SEPA checklist was either never revised, or no notice of its availability was ever provided for public comment. The lack of comment to the serious inadequacies raised is a solid basis for withdrawal. Ecology can not rely upon a SEPA checklist that was not up to date, and preceded an inadequate EIS. A response to our comments was a reasonable duty for Ecology, prior to going forward. Throughout this process, we had a reasonable expectation and due process rights to notice of Ecology's consideration of the IDF. The SEPA checklist could not be the basis for this action, since it needed to be updated, and Ecology never responded to our comments.*

ECOLOGY'S RESPONSE: When Ecology chose to permit disposal of three waste forms in the IDF, the agency used a performance assessment for ILAW glass, a risk assessment that addressed disposal of waste forms resulting from supplemental treatment that included DBVS glass, and the TWRS EIS that evaluated long-term storage of ILAW in the 200 East Area. Ecology also modified the SEPA checklist.

3. *USDOE's notice of August 18th 2004 was deficient and deprived us and the public of any meaningful opportunity to comment. How can a private notice be adequate if it fails to even inform people of how to comment to the Department of Ecology????*

   Note that the August 18 notice does not tell the public how to comment to Ecology. Nor did it provide access to relevant documents. USDOE's 'notice' failed to define 'rough soil excavation' and did not include notice of a proposed DNS. We had no reason to believe that Ecology would act upon this without giving us notice and opportunity to comment. The notice was legally deficient.

   You should also note that – despite Ecology's knowledge of our groups' strong interest in this and our prior comments objecting to the SEPA checklist – this was not disclosed to us in our last HPIN meeting, and Ecology's actions and consideration of USDOE's request was not disclosed even when I emailed questions about USDOE's request to get authorization. In terms of Ecology's respect for public participation, its code of conduct, and due process, Ecology has no excuse for not informing us that it was moving ahead to issue a DNS and authorization. Instead, we were misled into believing that nothing was happening on this request by USDOE and that it was ripe for discussion at the HPIN meeting yesterday.

   The notice was also deficient in failing to be provided to the interested parties list for this action, which would have been the full list of persons who asked to be informed regarding, or commented upon, the Hanford Solid Waste Disposal EIS.[15] This landfill is central to the preferred alternative adopted in that EIS, and is the center of discussion in the EIS. USDOE improperly chose to limit notice to a much smaller group, and to

exclude the people who had identified themselves as wanting notice and opportunity to comment on the topic covered in the Hanford Solid Waste Disposal EIS.

Legally, notice which is not designed to provide a reasonably interested person with the notice necessary for them to know to whom to comment, or how to review the documents, or which is not designed to reach the interested persons, is NOT notice at all.

ECOLOGY RESPONSE: The US Department of Energy's August 18 notice was issued as required under under WAC 173-303-830(2)(e), the regulation governing the issuance of temporary authorizations. The notice met the requirements set forth under that rule.

WAC 173-303-830(2)(e)(ii)(C) provides that notices of temporary authorizations be mailed to the "facility mailing list." USDOE's August 18 notice was mailed to the Hanford "Highly Interested" mailing list which serves as the "facility mailing list" for the Hanford Site. No additional mailings were required.

Inasmuch as Ecology made a determination of nonsignificance, rather than a *mitigated* determination of nonsignificance, the Agency was not required to hold a 14-day consideration period. Therefore, the notice provisions of WAC 197-11-510 did not apply.

Ecology strives to engage the public proactively in the decision-making process at the Hanford Site. Ecology heard your concerns about the August 2004 HPIN meeting and, in response, added an "Upcoming Issues" standing agenda item to subsequent HPIN meetings.

4. *SEPA requires that Ecology consider the impacts of a proposed action at the earliest time that state action could result in an activity with a probable significant impact on human health and the environment. Clearly, as Washington State has forcefully argued in federal court, having a landfill open to unknown offsite low-level and mixed wastes, on top of the unknown cumulative impacts from existing wastes and the onsite wastes that will be disposed in the same landfill, will have a probable significant impact.*

   SEPA requires consideration of those impacts, even if Washington State lacked the jurisdiction (which it does not[16]) over the Low-Level Wastes which would go into this same landfill. A DNS could not be issued if it failed to mitigate those impacts by limiting the landfill to onsite cleanup related wastes.

   Excavation is clearly the major action which leads to other impacts. Excavation of a hole determines the capacity and likelihood of the hole being used for offsite waste. We were disturbed that our comments and concerns that the size of this facility should be limited to onsite waste forecast to be generated over a five to ten year window were never considered. This is a reasonable mitigation to ensure that waste generation is minimized and that the landfill is not a magnet for other wastes. There is considerable case law regarding landfills and facilities serving as a "magnet", and requiring agencies to consider limiting the initial size of a landfill to wastes that are forecast onsite for a reasonable time period. Five to ten years is that reasonable time period. Allowing excavation to be large enough for wastes through 2018 is authorization of a magnet, especially when the full plan calls for USDOE to be able to open up additional "cells".

   Ecology has not adequately answered our detailed questions about capacity of the initial cells, and shown how that volume capacity relates to forecasts for onsite waste for

specific waste streams. This is just one example of the failure to provide notice and to meet the duties under SEPA and Administrative Procedures Act and Ecology's own rules to respond to provide notice and response to comments on this landfill's authorization, SEPA checklist and DNS.

The cure for these deficiencies is a formal agreement (withdrawing our due process, notice and SEPA claims) to withdraw the DNS [17] and authorization, with reissuance limited, pursuant to the notice provided to the public by USDOE, to authorization for a facility sized and limited by permit and terms of a mitigated DNS to manage offsite waste forecast to be generated over a five to ten year period.

ECOLOGY RESPONSE: Ecology is conducting a phased review of the IDF waste that is appropriate for this facility. At this time, Ecology is granting permission to dispose of three MLLW forms. The conditions of the draft permit that govern this action require the Permittees to request and permit modification and to supply Ecology with information that will aid Ecology in determining the impacts of adding other wastes. As discussed above, the phased review is appropriate because the Permittees have not requested a modification to add waste forms other than the three in the permit, the IDF expansion necessary to accept a greater volume of wastes or wastes in other forms would be the subject of future permitting action, and information about the nature of other waste forms is not available. Ecology will not withdraw past DNS documents that were the result of review of a phase of the project because no new information has made reevaluation necessary.

COMMENTER:

Todd Martin – Hanford Advisory Board

Comment 1:

The Development process for the Integrated Disposal Facility (IDF) permit has demonstrated two positive characteristics of Hanford cleanup: (1) agency cooperation despite significant and potentially diversionary differences, and (2) responsiveness to Hanford Advisory Board (Board) input.

The Board congratulates the Department of Energy (DOE) and the Washington State Department of Ecology (Ecology) on their collaboration in developing the IDF permit limited to bulk vitrification, immobilized low activity waste (ILAW) and IDF-generated waste. Further, the Board thanks the agencies for revising and reissuing the permit application in response to Board concerns regarding the initial size and scope of the facility.

However, the Board remains concerned with the potential for expansion of the IDF without sufficient analysis. In Advice #153, "Need for Site-wide Cumulative Impact Analysis Relative to Hanford Solid Waste Environmental Impact Statement (HSW-EIS)," the Board advised,

> *"…the Department of Energy not proceed with the proposed decision to add the offsite wastes considered in the draft HWS-EIS to the Hanford site's soil until an analysis has been conduced assessing the cumulative impacts of adding the waste to waste already disposed on site. Only if we understand the cumulative risks from Hanford's waste can we consider whether adding more waste creates unacceptable risks and impacts."*

This is one example of the Board's long-standing concern that a comprehensive Hanford cleanup requires comprehensive analysis of all the risks posed by waste disposal on site. Therefore, the board advises that subsequent IDF permit modifications include cumulative risk analyses of all waste previously disposed in IDF in addition to all wastes proposed for disposal in IDF in the permit modification. These analyses should comply with all environmental laws and regulations and include sound public involvement processes.

Advice

1. *The IDF permit should be modified to ensure subsequent permit modifications require cumulative risk analysis of all wastes previously disposed in the IDF in addition to those proposed in future IDF Permit modifications.*
2. *Per the Board's prior advice, the Tri-Party Agreement should require cumulative risk analyses of all waste disposed at Hanford.*

ECOLOGY RESPONSE:

Comment 1: Comment accepted. Permit condition III.11.I addressed the issue of considering cumulative risk analysis prior to future permit modifications. Permit condition III.11.I.5.1 was modified to reflect the emphasis guided by the comment. See the modified permit condition III.11.I.5.1 below:

> The Permittees must create and maintain a modeling - risk budget tool, which models the future impacts of the planned IDF waste forms (including input from analysis performed as specified in conditions III.11.I.2.a through III.11.I.2.a.ii above) and their impact to underlying vadose and ground water. This model will be updated at least every 5 years beginning no more than one year after the issuance date of this permit and results provided to Ecology for review. The model will be updated more frequently if needed, to support permit modifications whenever a new waste stream is being proposed for disposal in the IDF. ***This modeling-risk budget tool shall be conducted in manner that represents a cumulative risk analysis of all waste previously disposed of in the entire IDF (both cell 1 and cell 2) and those waste excepted to be disposed of in the future for the entire IDF.*** The groundwater impact should be modeled in a concentration basis and should be compared against various performance standards including but not limited to drinking water standards (40 CFR 141 and 40 CFR 143). Ecology will review modeling assumptions, input parameters, and results and will provide comments to the Permittees. Ecology comments shall be dispositioned through the Review Comment Record (RCR) process and will be reflected in further modeling to modify the IDF ILAW waste acceptance as appropriate.

Comment 2: Ecology also sees the value in cumulative risk analysis for all waste disposed at Hanford.

COMMENTER

Ted Wooley
CH2M HILL Hanford Group
From a May 10, 2005 electronic message:

Comment 1;

Bud I wanted to send these while I had the chance. Another section needing revision is Chapter 3.0. Please take a look at the first paragraph. As written it doesn't make allot [sic] [?] of sense. More to come.

(Suggested language is from a May 18, 2005 electronic message)

Pursuant to WAC 173-303-300(5) this waste analysis plan (WAP) documents the waste acceptance process, sampling methodologies, analytical techniques, and overall processes that will be undertaken for mixed waste accepted for disposal at the Integrated Disposal Facility (IDF). . Mixed waste disposed at the IDF will be limited to vitrified low-activity waste (LAW) from the RPP-WTP and DBVS and mixed waste generated by IDF operations. (see Chapter 1, Part A Form). Vitrified LAW generated by RPP-WTP is known as Immobilized Low Activity Waste (ILAW) and generated by DBVS is known as Bulk Vitrified Waste (BVW). The IDF will be located in the 200 East Area of the Hanford Facility.

ECOLOGY RESPONSE: Comment accepted. The permit section to which the commenter is referring is the first paragraph of the "Waste Analysis Plan" in Chapter 3. The language will be changed as suggested.

Comment 2:

- *FACT SHEET, has "draft" water mark. Please remove water mark*

ECOLOGY RESPONSE: Comment accepted. The watermark will be removed.

Comment 3:

- *Part A Form; pages 3-6*
    - *Waste Handling Code D81 (land Treatment) is incorrect. Please replace with D80 (Landfill).*

ECOLOGY RESPONSE: Comment accepted. The waste code D81 on pages 3-6 will be changed to D80.

Comment 4:

- *Section 2.0; suggest the following revision be made. Section 2.1 is referring to a section of the permit application not incorporated within the draft permit*
    - *A topographic map is located in Appendix 2A reflecting general topographic requirements and the area set aside for IDF. The actual dimensions and waste volume capacity of the RCRA trench that is being permitted are described in the Part A and Section 2.1 of the permit application.*

ECOLOGY RESPONSE: Comment accepted. The text will be changed to the suggested text.

Comment 5:

From a May 5, 2005 electronic message:

- *Appendix 4B is missing pages 9, 12, 18, 25, 28, 37, 40, 68, 72, and 78*

ECOLOGY RESPONSE: Comment accepted. The page numbering will be corrected.